Installation and Operating Manual

System Keyboard with Joystick and Jog Shuttle, 12VDC/230VAC

KBD-2

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Betriebsanleitung
Installation and Operating Instructions ⇒ www.videor.com
Mode d'emploi
Instrucciones de manejo

Safety Instructions

- Read these safety instructions and the operation manual first before you install and commission the unit.
- Keep the manual in a safe place for later reference.
- Protect your unit from contamination with water and humidity to prevent it from permanent damage. Never switch the unit on when it gets wet. Have it checked at an authorized service center in this case.
- Never operate the units outside of the specifications as this may prevent their functioning.
- Do not operate the unit beyond their specified temperature, humidity or power ratings. Operate the unit only at a temperature range of 0°C to +50°C and at a humidity of max. 90%.
- To disconnect the power cord of the unit, pull it out by the plug. Never pull the cord itself.
- Pay attention when laying the connection cable and observe that the cable is not subject to heavy loads, kinks, or damage and no moisture can get in. Do not attempt to disassemble the camera board from the dome.
- The warranty becomes void if repairs are undertaken by unauthorized persons. Do not open the camera housing.
- Maintenance and repair have to be carried out only by authorized service centers.
- Do not use strong or abrasive detergents when cleaning the dome. Use a dry cloth to clean the dome surface. In case the dirt is hard to remove, use a mild detergent and wipe gently.

NOTE: This is a class A digital device. This digital device can cause harmful interference in a residential area; in this case the user may be required to take appropriate corrective action at his/her own expense.

1. Introduction

1.1 Features

This keyboard controller is capable of controlling dome cameras and providing remote control functions for a variety of external switching devices such as Multiplexers, Digital Video Recorders etc.
A combination of 4 Keyboard controllers and 5 Multiplexers comprises a small matrix system (64x4) using its remote control functions and programmable macro functions.

- Programming and Control of Camera Series: Fastrax and Minitrax
- For DVR Series DLR1.2, DLR3/4, DTR, DIR and DPR
- Supports up to 508 Cameras
- Joystick Control of PTZ Functions
- Programmable Sequences / Patterns
- Preset Position and Pattern Control
- Auto and Random Scanning
- Auxiliary Operation
- Master / Slave Operating (up to 3 Slaves)
- RS-232/RS-485 Multi Protocol Interfaces
- 16x2 Lines LCD Display

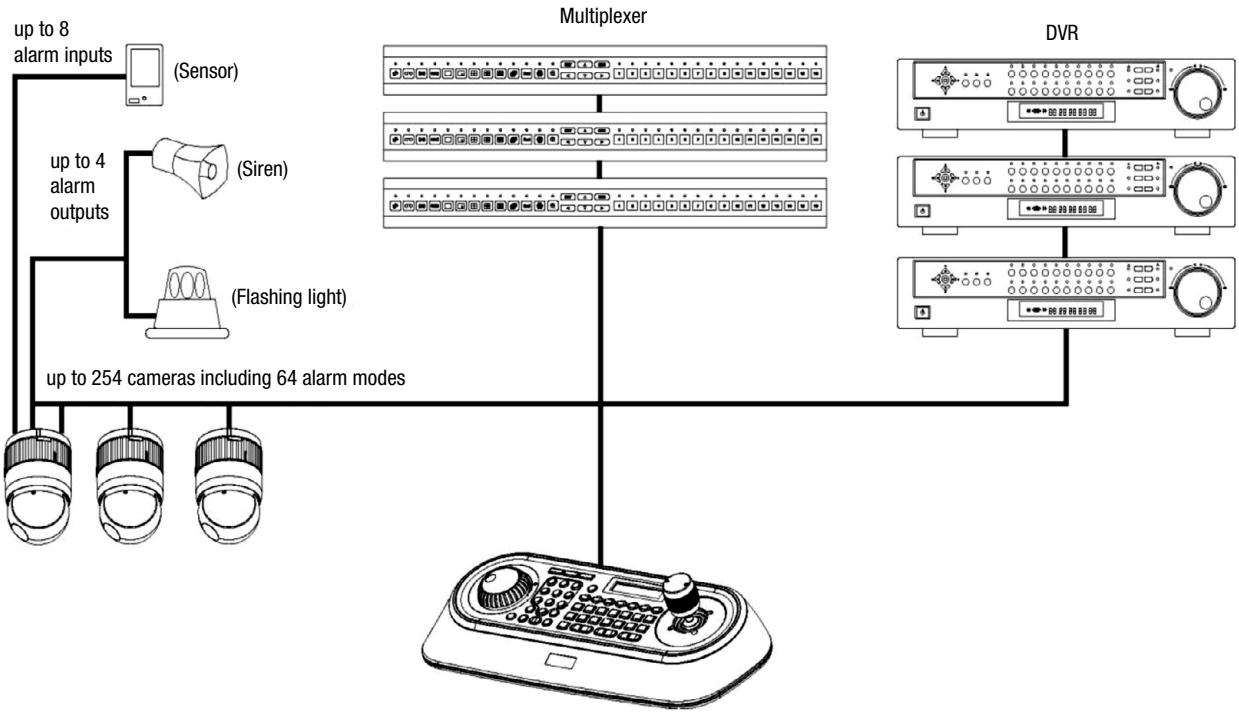


Figure 1: Typical System Configuration

1.2 Package Contents

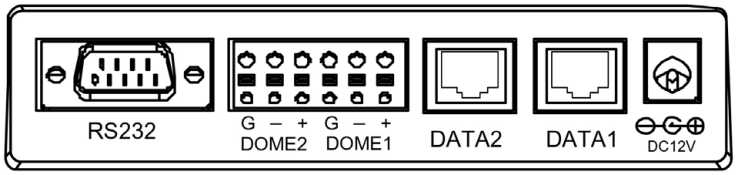
The package contains the following:

1x Keyboard controller
1x Instruction manual
1x 12VDC Power supply (SMPS)
1x Power Cord

1.3 Required Installation Tools

No special tools are required to install the KBD controller. Refer to the installation manuals for the other items that make up part of your system.

1.4 Connectors



Connector	Usage
RS-232	RS-232: DVR / Upgrade
DOME2	RS-485: DOME / DVR / Multiplexer / Slave Keyboard
DOME1	RS-485: DOME
DATA2	For Junction Box only
DATA1	For Junction Box only
DC12V	For Power Supply

NOTE: Don't connect the DATA1 PORT and DC12V PORT together.

2. Installation and Configuration

2.1 Basic Configuration of Fastrax Dome System

	J-Box	Dome
RS-485(+)	DOME 1 +	RX+ (TX+)
RS-485(-)	DOME 1 -	RX- (RX-)

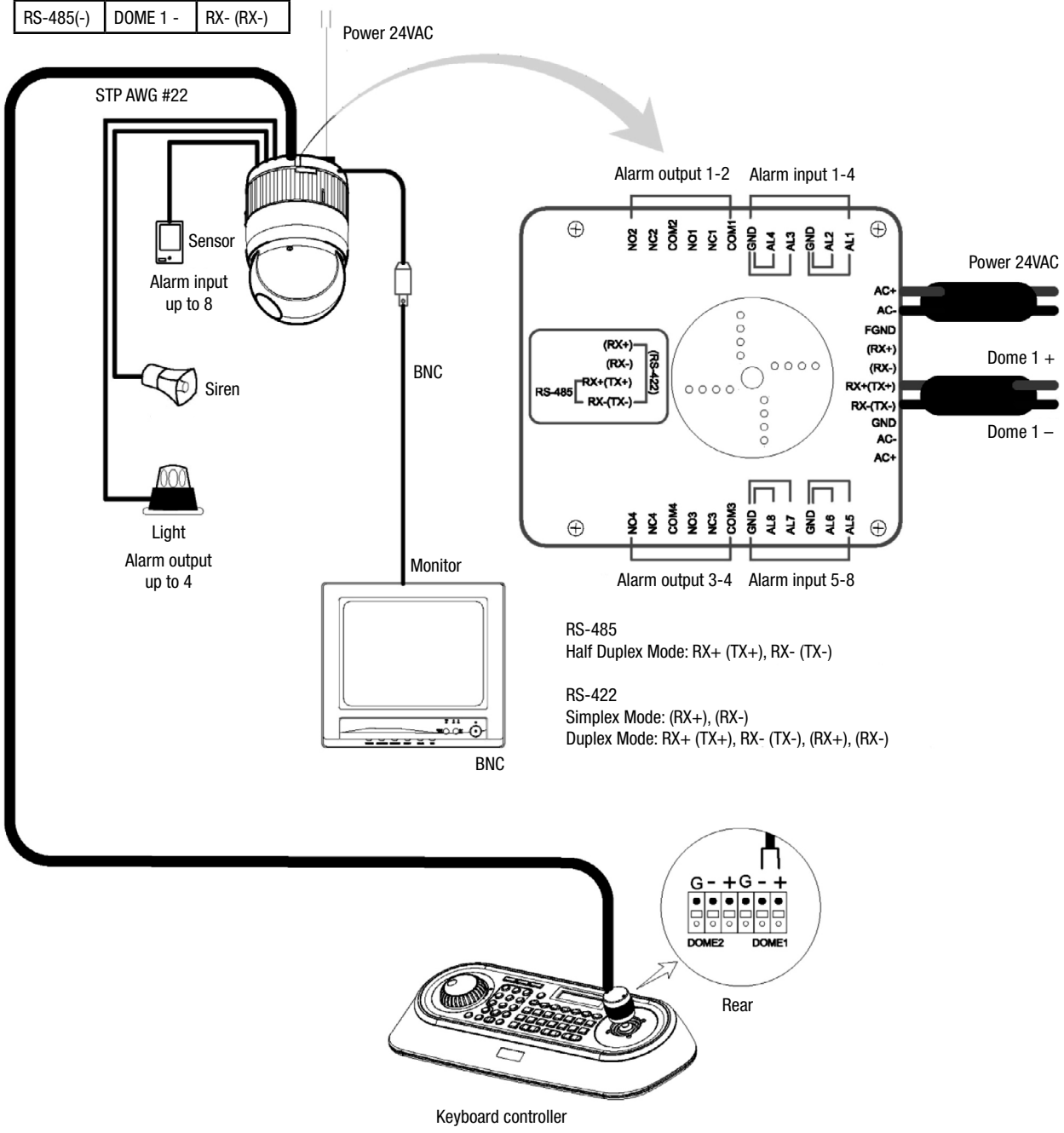


Figure 2: Basic installation diagram

2.2 Configuration with DVR

	J-Box	Dome
RS-485(+)	DOME 1 +	RX+ (TX+)
RS-485(-)	DOME 1 -	RX- (RX-)

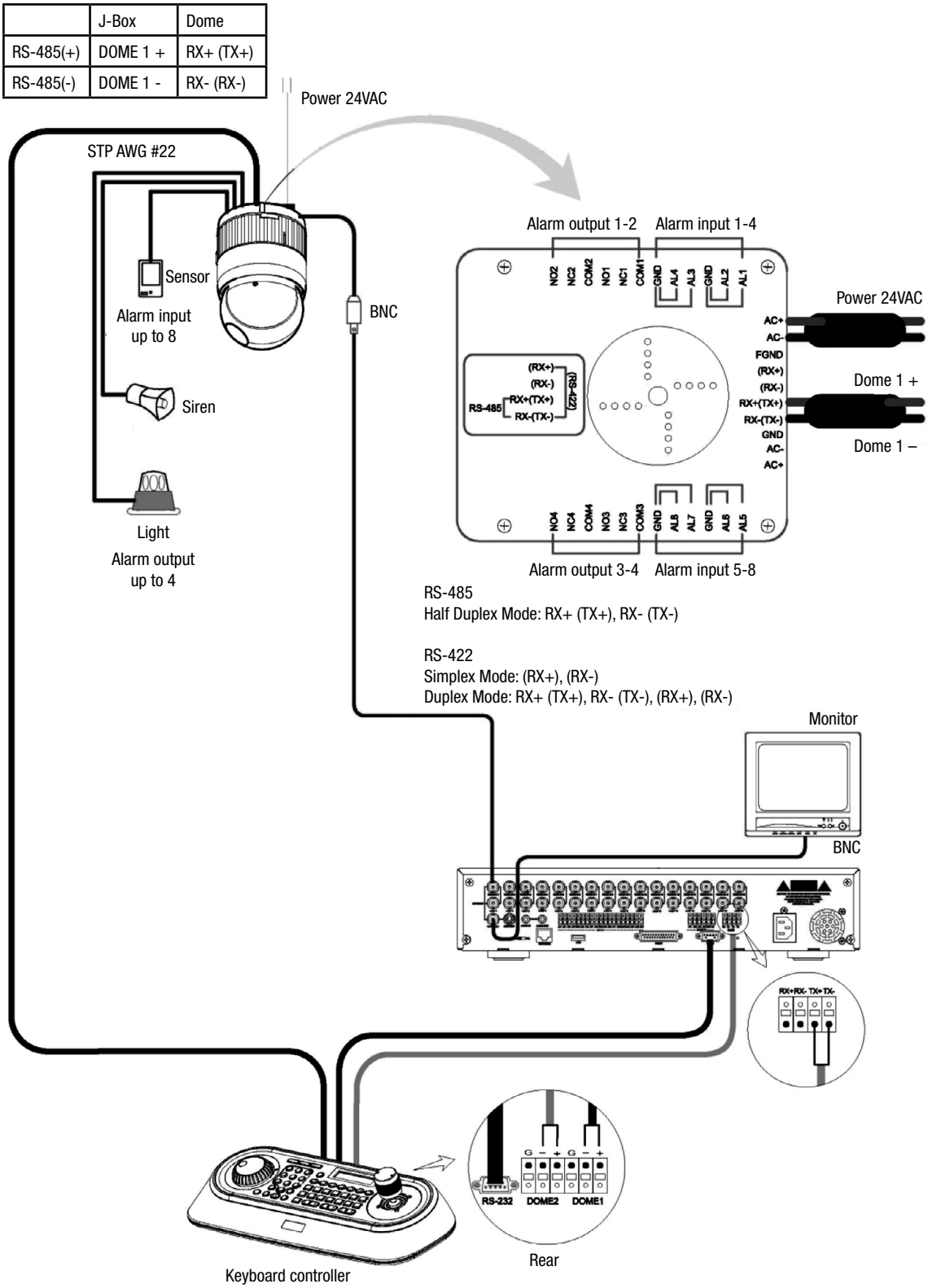


Figure 3: Installation diagram with DVR

2.3 Configuration with MUX

	J-Box	Dome
RS-485(+)	DOME 1 +	RX+ (TX+)
RS-485(-)	DOME 1 -	RX- (RX-)

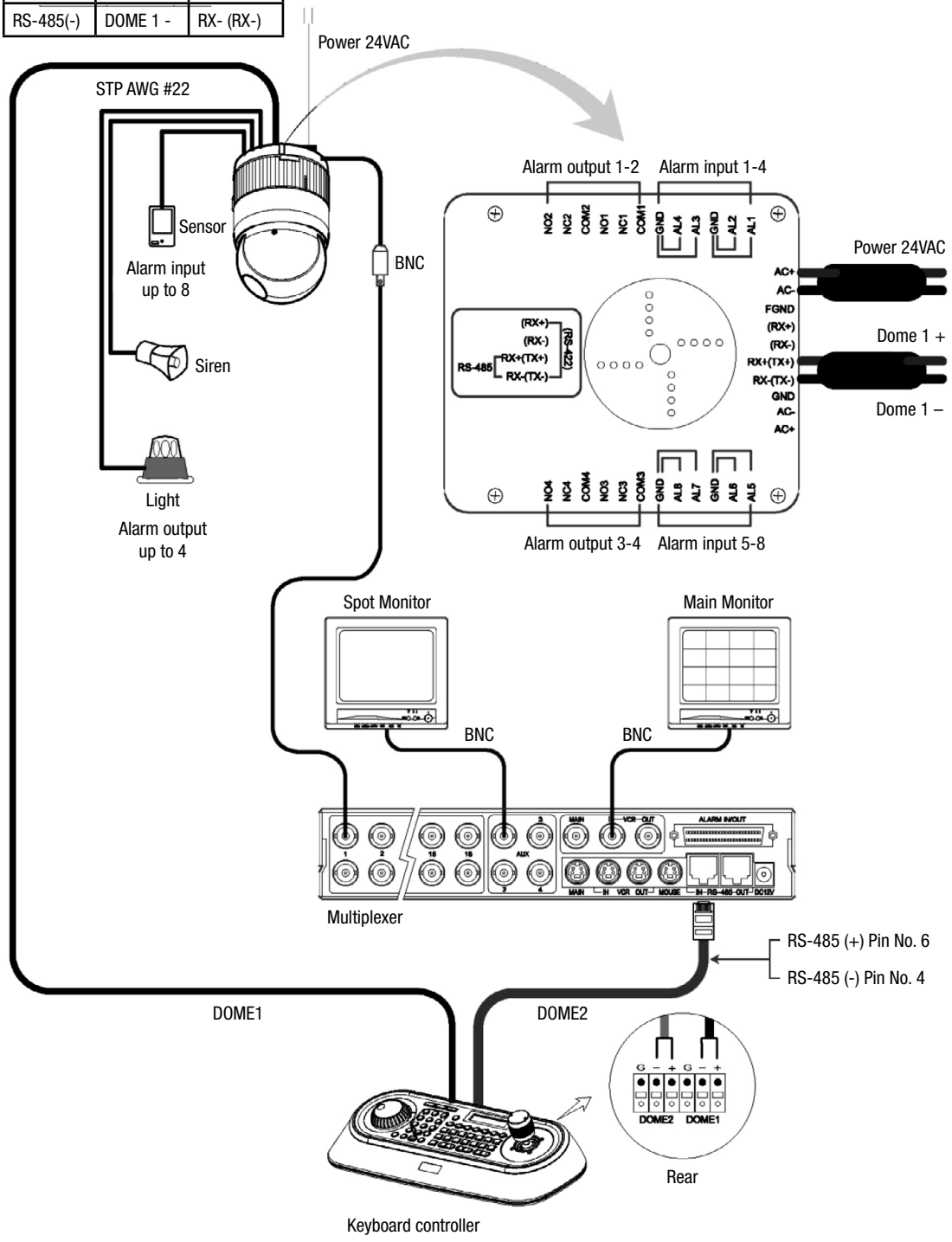


Figure 4: Installation diagram with MUX

2.4 Configuration of Master and Slave Keyboards

	J-Box	Dome
RS-485(+)	DOME 1 +	RX+ (TX+)
RS-485(-)	DOME 1 -	RX- (RX-)

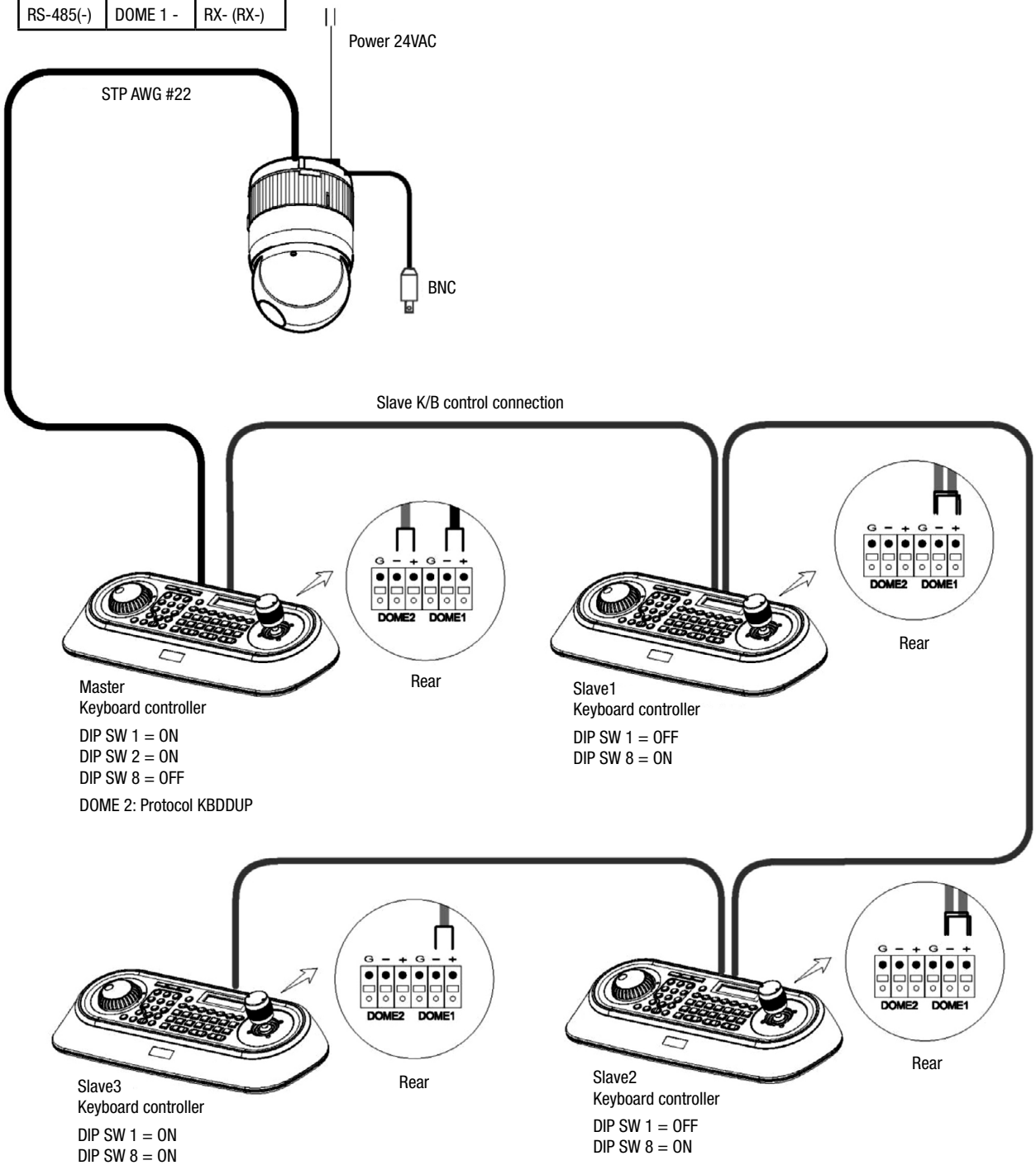


Figure 5: Master and Slave keyboard connection

NOTE: Connect the DOME1 port of all slave keyboards to the DOME2 port of the master keyboard and set the DIP SW 1 and 2 as the figure above.

2.5 Termination

The first and last devices in an installation (dome and keyboard controller) must have the data line terminated by setting the DIP switch. Without proper termination, there is potential for control signal errors. Total length of the cable for communication should not exceed 1.2km.

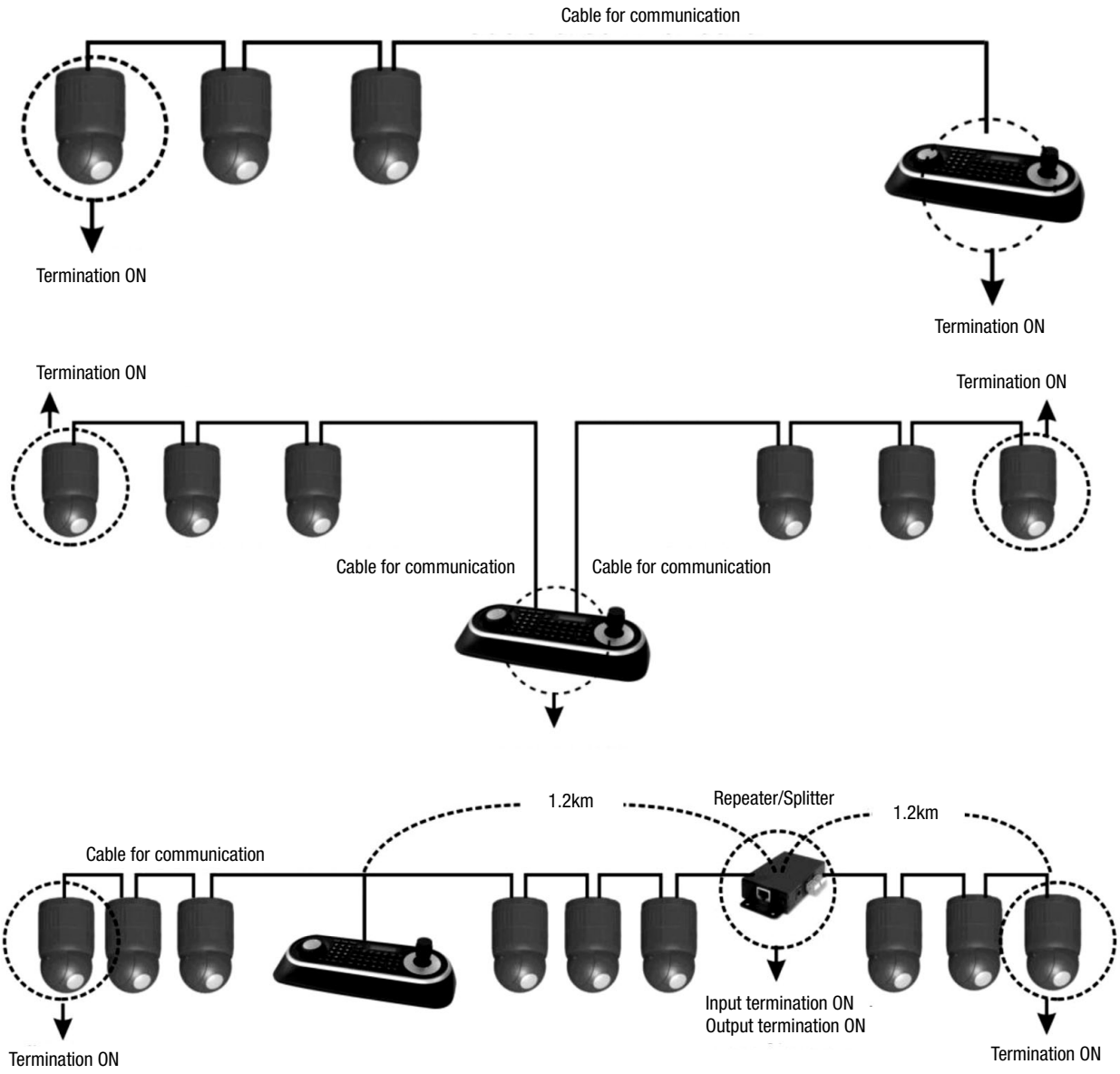


Figure 6: Termination diagram

2.6 Dip Switch Setting

Termination and Master/Slave: Set the switches according to your configuration.

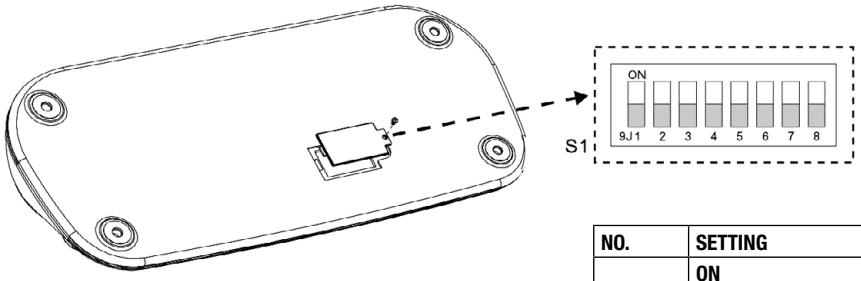


Figure 7: Keyboard DIP switches

NO.	SETTING	DESCRIPTION
1	**ON**	DOME1 Termination
	OFF	
2	**ON**	DOME2 Termination
	OFF	
3	**ON**	J-Box Data2 Termination
	OFF	
4~6	**OFF**	(Reserved)
7	ON	DOWNLOAD ON
	OFF	DOWNLOAD OFF
8	ON	Slave
	OFF	Master

2.7 Multiplexer Configuration

Duplex Setup:

NOTE: Multiplexers to be controlled by the keyboard controller require a new ROM version. The new multiplexer ROM accepts control instructions from the keyboard controller. If your multiplexer 's serial number is „M104xxxx" or higher, then it is ready to accept control instructions. Alternately, you can check the status of your multiplexer by pressing the Menu key of the multiplexer and then selecting item 9. If you see the „ Protocol" option line in the Communication Setup menu, your multiplexer has the new ROM, and you do not need to replace the ROM. If your multiplexer has the old ROM version, contact your distributor on how to get new a ROM.**

CAUTION: Before opening the multiplexer, make certain you are working on an antistatic work surface and that you are wearing a grounding wrist strap. Also, be very careful to orient the ROM chip correctly and not bend any of the pins.

NOTE: Replace the multiplexer firmware with the new multiplexer ROM (U45) as follows; remove the top cover of the multiplexer, and locate the ROM (U45). Before removing the ROM, note the orientation of the ROM. After removing the old ROM from the socket, insert the new ROM.

Be careful to orient the new ROM the same as the old ROM. (Refer to the Multiplexer instruction manual.)

Set the multiplexer functions as follows: (Press the Menu key of the multiplexer to enter the Unit Options menu.)

Unit options:

Unit number	001 (first Mux) or 002 (second Mux)
Communication type	RS-485
Baud rate	9600 bps
PORT	ON
** Protocol **	B (If you see this line, the multiplexer has the new ROM)

** The old ROM version does not show Protocol selection option.

Multiplexer alarm inputs will function normally, but the Dome controller has no way of knowing about alarms wired to the Multiplexer. If a Dome preset is required for such an alarm, you must connect the same alarm input to both the multiplexer and Dome.

Triplex setup:

Unit setup network type	RS 485
Baud rate	9600 bps
Unit address	001 ~ 128
Protocol	B1

3. Keyboard Setup

To setup the keyboard controllers, the user needs to setup the network, passwords and perform special tasks such as Uploading and Downloading programmed data from the dome cameras. To enter the Keyboard menu, press and hold **CTRL** and press **MENU** expressed as **CTRL+MENU** in the manual. You will see the following menu.

```
MAIN MENU
1. Configuration
```

To scroll menu items, move the joystick up or down.

To enter the sub menu, push the joystick to the right.

To change the value, twist the joystick handle.

```
MAIN MENU
1. Configuration
2. Network
3. Camera
4. Time/Date
5. Alarm
6. LCD
7. Data Bank
8. Initialization
9. Hold time: 005s
Save and Exit
```

3.1 Configuration

1. Key beep: ON	ON: the KBD controller 's internal speaker will sound when you press key.
2. key-lock: OFF	OFF - Disable Auto Key-Lock function. 15Min, 30Min, 60Min - After elapsed setup time, keyboard locks automatically. User needs the login password to operate the Keyboard again
3. S-Range: 32	Scan Range: 32, 254, 3999 –scan dome cameras up to setting number.
4. Chg User PW	Enters the change user password submenu.
5. Chg Admin PW	Enters the change administrator password submenu.
6. Rescan dome	Rescan the connected dome cameras.
Save and exit	Save the changed settings and return to the previous menu

Change User Password

```
Current PW:   XXXX
NEW PW:       YYYY
Confirm PW:   YYYY
Save and Exit
```

This screen allows you to change user password.

Enter 4 digits password and press **ENTER**. Factory Default setting is **1111**.

The user is not allowed to setup or program the KBD controller and the Dome Camera.

Change Administrator Password

```
Current PW:   XXXX
NEW PW:       YYYY
Confirm PW:   YYYY
Save and Exit
```

This screen allows you to change administrator password.

Enter 4 digits password and press **ENTER**. Factory Default setting is **9999**.

NOTE: Factory default Administrator 's password is *9 9 9 9 + ENTER* .

User password is *1 1 1 1 + ENTER*

If you forgot your own password, contact service personnel or distributor.

3.2 Network

1. J-BOX Set: OFF	Select to use the optional Junction Box or not.
2. Set Port	Select the baud rate and the connected unit's protocol.
3. MUX Config	Set the multiplexer configuration.
4. Set Slave KBD	Select to use the slave keyboard or not.
Save and exit	Save the changed settings and return to the previous menu

Set Port

1. Set Baud Rate
2. Com Ports

Exit (ESC)

Set Baud Rate	Enters the Baud Rate setup submenu.
Com Ports	Enters the Communications Ports setup submenu.
Exit	Return to the previous menu.

Set Baud Rate

Set Baud Rate

1. DOME1: 9600
2. DOME2: 9600
3. RS232: 9600

Save and Exit

J-BOX: OFF

Set Baud Rate

1. DOME1: 9600
2 D2/DVR: 9600
3. ALARMPC: 9600
4. MUX/KBD: 9600
5. DVR/AUX: 9600

Save and Exit

J-BOX: ON

Com Ports

Com Ports	
1. DOME1:	DOME
2. DOME2:	NONE
3. RS232:	NONE
Save and Exit	

J-BOX :OFF

Com Ports	
1. DOME1:	DOME
2 D2/DVR:	NONE
3. ALARMPC:	NONE
4. MUX/KBD:	NONE
5. DVR/AUX:	NONE
Save and Exit	

J-BOX :ON

J-BOX: OFF		
DOME1	2400~38400	None / Dome / DVR5
DOME2	2400~38400	None / Dome / DVR1-4 / PC-DVR / KBDDUP / KBDTRI / AUX IN
RS232	2400~38400	None / DVR1-4 / PC-DVR / AUX IN
J-BOX: ON		
DOME1	2400~38400	RS485: None / Dome
D2/DVR	2400~38400	RS485: None / Dome / DVR1-4 / PC DVR / AUX IN
ALARMPC	2400~38400	RS232: None / AUX IN
MUX/KBD	2400~38400	RS485: None / DUPLEX / TRIPLEX / AUX IN
DVR/AUX	2400~38400	RS232: None / DVR1-4 / PC-DVR / AUX IN

KBDDUP: Slave Keyboard + Duplex Multiplexer

KBDTRI: Keyboard + Triplex Multiplexer

AUX IN: Outputs the auxiliary signal input to Dome1 (FASTRAX, PELCO only)

NOTE: When the DVR is selected at a port, the other port displays the same DVR only. To change the DVR num ber at the other port, first change the current DVR number to none.

MUX Config (Multiplexer Configuration)

This screen allows you to set multiplexer switching settings when you select the camera by pressing **NO** + **CAM**. Up to 64 Cameras can be installed using 5 MUXs and 4 keyboards. It is equivalent to a 64x4 matrix system. Each four users can view one of 64 cameras to his own SPOT(AUX) monitor.

MUX Config	
1. MUX Channel:	16
2. Set MUX A	
3. Set MUX B	
Save and Exit	

This menu is for assignment when multiplexers are installed in two levels. Two levels means that spot outputs of the first level multiplexers is connected to the video input of the second level multiplexer.

Press **NO** + **CAM** will display the selected camera on the spot output of the second level multiplexer.

MUX Channel: NO (no use), 16, 28, 32, 48, 64 – Select the MUX channel number used in the multiplexer configuration.

When you select the desired number, the MUX configuration table is made automatically according to the number as the figures, page 15-17.
When the configuration is different from the auto-setting, you can change the value individually as below.

Set MUX A

Cam<-	MUX	In	Out
0001	001	01	01

This menu is for assignment the first level (A level) of MUX.

Cam: Dome camera ID

MUX: MUX ID

In: Input of MUX

Out: Spot Output number of the MUX
(01: master keyboard, 02: slave keyboard 1, 03: slave keyboard 2, 04: slave keyboard 3)

1. Move the cursor (<–) on the **Cam** column by the joystick.
2. Twist the joystick handle to change the value.
3. Move the cursor (<–) on the **MUX** column by the joystick.
4. Twist the joystick handle to change the value.
5. Move the cursor (<–) on the In column by the joystick.
6. Twist the joystick handle to change the value.
7. Press **CTRL** or **ESC** to exit.
8. **To save data, move the joystick right on „Save and Exit" row in MUX Config.**

Press **OFF** to delete the camera number.

Set MUX B

Cam<-	MUX	In	Out
0001	005	01	01

This menu is for assignment the second level (B level) of MUX.

Cam: Dome camera ID

MUX: MUX ID

In: Video Input number connected from the spot output of the first level's MUX.

Out: Spot Output number of the MUX
(01: master keyboard, 02: slave keyboard 1, 03: slave keyboard 2, 04: slave keyboard 3)

For example: When the MUX channel is 64:

At the master keyboard, pressing **64** + **CAM** is operates as below.

Cam<-	MUX	In	Out
0064	004	16	01

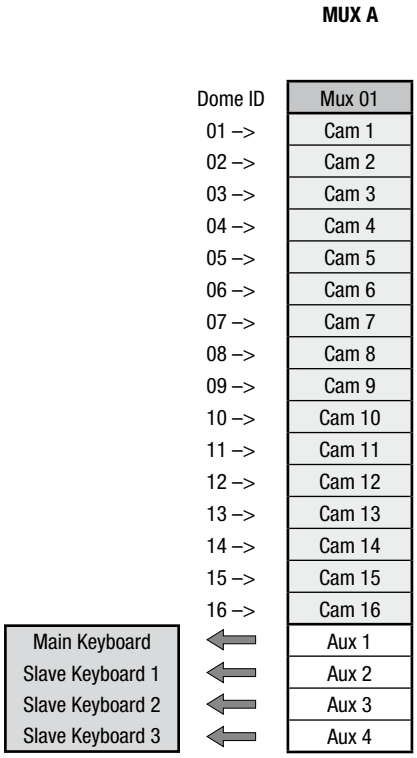
MUX A: The multiplexer 04 outputs camera (ID=64) of the video input 16 to the spot output 1.

Cam<-	MUX	In	Out
0064	005	13	01

MUX B: The multiplexer 05 outputs the camera (ID=64) of the video input 13 to the spot output 1.

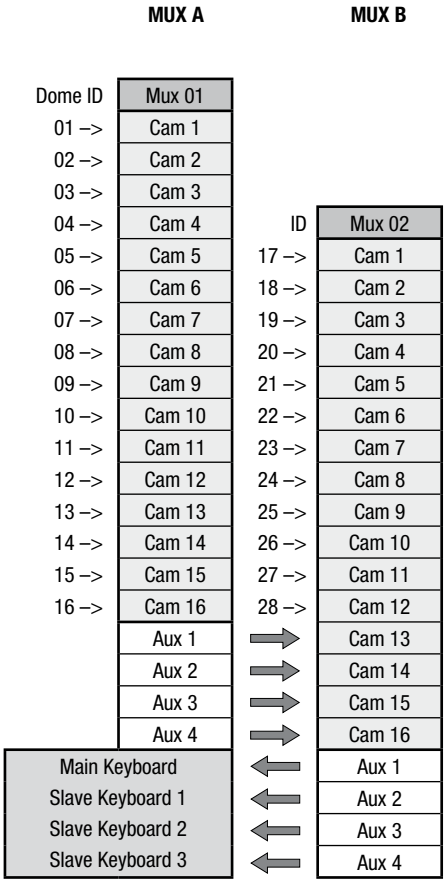
Multiplexer Configuration Examples

Example 1: Multi/Single user system with 16 Cameras and 1 Multiplexer



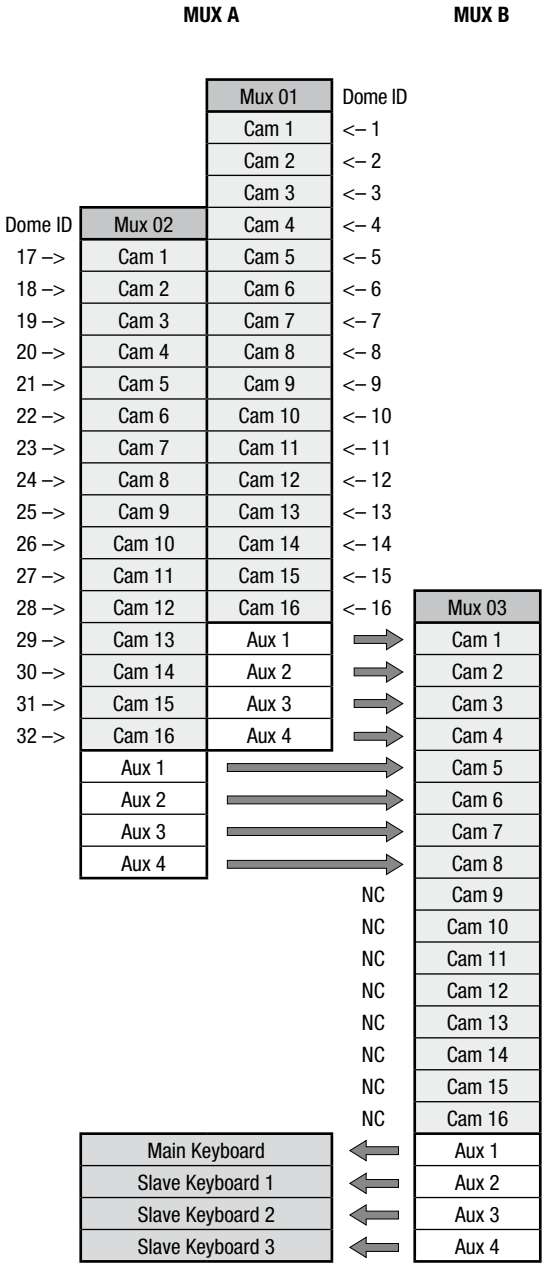
One Mux configuration

Example 2: Multi/Single user system with 28 Cameras and 2 Multiplexers



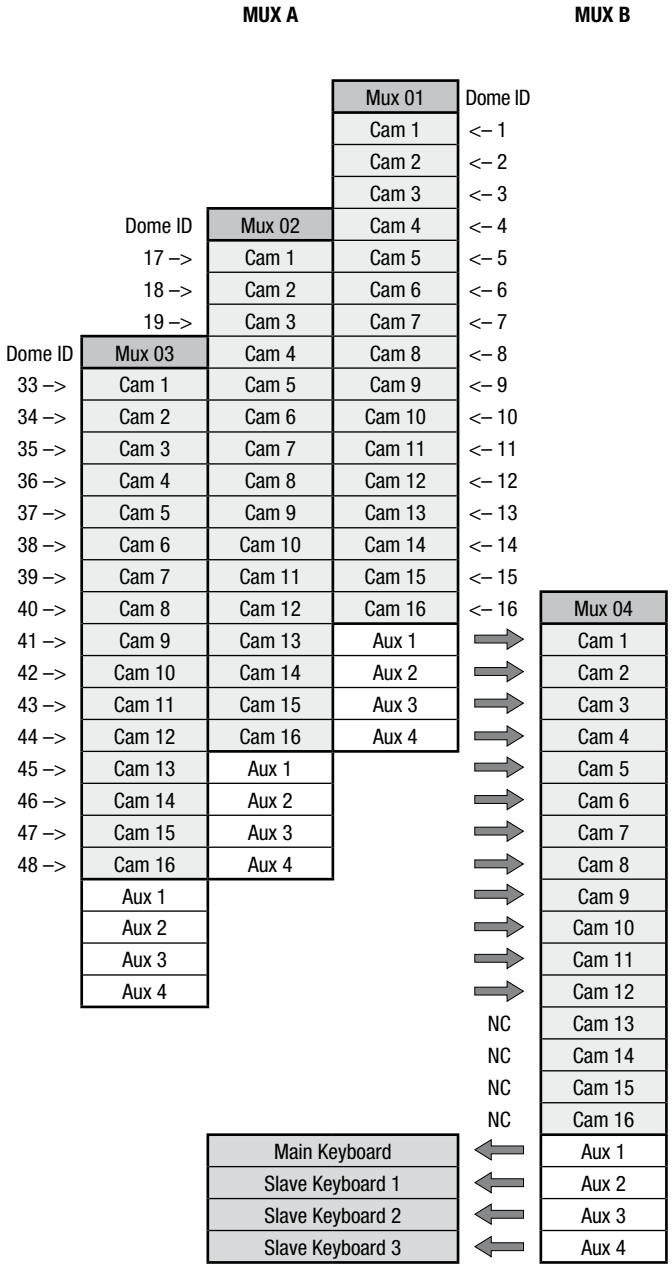
Two Muxs configuration

Example 3: Multi/Single user system with 32 Cameras and 3 Multiplexers



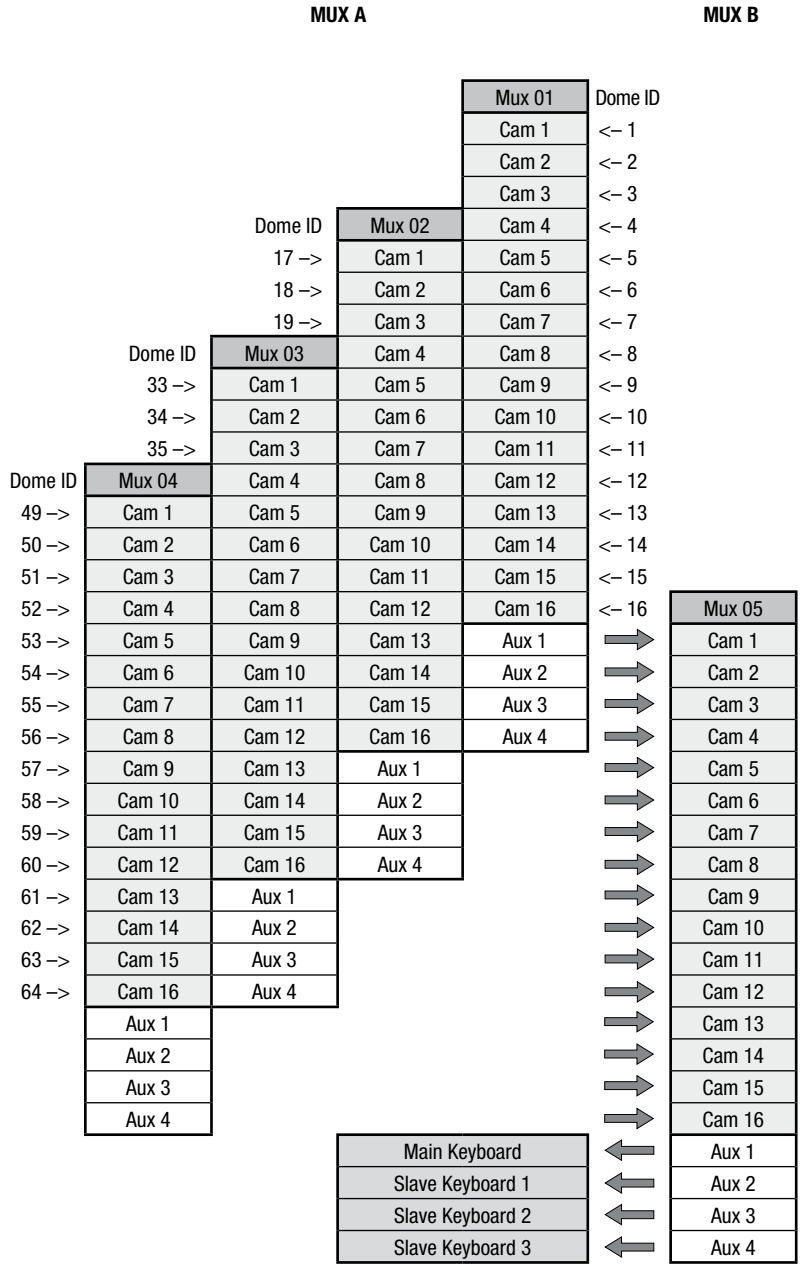
Three Muxs configuration

Example 4: Multi/Single user system with 48 Cameras and 4 Multiplexers



Four Muxs configuration

Example 5: Multi/Single User system with 64 Cameras and 5 Multiplexers



Five Muxs configuration

Set Slave Keyboard

Set Slave Kbd	
1. Slave KBD:	OFF
2. MUX cont:	OFF
3. DVR cont:	OFF
4. Dome Menu:	OFF
5. Slave KBD Unit	
Save and Exit	

This screen allows you set up Slave KBD controller, how many the slave KBD controller and Mux menu controllability and DVR menu controllability, etc.

1. Slave KBD	ON: Slave KBD controller can control the unit which is connected Master KBD controller.
2. MUX control	ON: Slave KBD controller is allowed to access Mux setup menu.
3. DVR control	ON: Slave KBD controller is allowed to access DVR setup menu.
4. Dome Menu	ON: Slave KBD controller is allowed to access Dome menu setup.
5. Slave KBD Unit	Enters the Slave keyboard unit submenu.
Save and exit	Save the changed settings and return to the previous menu

Set Slave Keyboard Unit

Slave KBD Unit	
1. Slave ID1:	OFF
2. Slave ID2:	OFF
3. Slave ID3:	OFF
Save and Exit	

This setup allows you set up the slave keyboard, how many slave keyboards.
To use the slave keyboard, set ON.

3.3 CAMERA

Cam<-	PR	PT	BR
0001	F2E	D1	9600

Cam: Camera ID
PR: Protocol [F2,F2E,P-D (PELCO-D), P-P (PELCO-P)]
PT: Port [D1 (DOME1), D2 (DOME2)]
BR: Baud rate

This camera setup is listed up to 64 cameras and the camera ID has up to 3999.

When the keyboard has that the **Alarm Check** option is ON, the camera setup is set automatically after the keyboard checks the camera at the first power on or after the scan dome function.

At this time, the F2E protocol could not be changed.

To add the other camera:

1. Select the blank line (- - -) by moving the joystick down or up.
2. Twist the handle of the joystick clockwise, then the next camera number displays or press camera number and **CAM** key, if that number is not already defined, the camera number displays.
3. Set the appropriate protocol and port moving the cursor (<–)by the joystick.
   Alarm check option is ON: P-D (PELCO-D), P-P (PELCO-P)
   Alarm check option is OFF: F2, F2E, P-D (PELCO-D), P-P (PELCO-P)
4. Set the appropriate baud rate of the camera.
5. Repeat step 1-4 to add a new camera.
6. Press **CTRL** to save and exit.
7. To change the camera, repeat step 2-6 after selecting the desired camera number.

Press **OFF** to delete the saved camera.

Press the **ESC** key to exit without saving.

NOTE: The baud rate of the F2E is according to the value of the set baud rate menu.

When the keyboard has that the alarm check option is OFF, the camera setup displays the blank value after the first power on. At this time, set all cameras according to the procedure above.

ATTENTION: If a recorder is controlled via the DVR4 protocol, the local dome control is deactivated and cameras may no longer be configured in this menu setting. The DVR4 protocol is designed to allow the domes to be controlled directly via the RS-485 interface of the recorder, and not from the KBD-2 keyboard. If one wishes to control the domes via the keyboard, then the DVR2 protocol should be used.

3.4 TIME / DATE

TIME/DATE

1. Display:	ON
2. Year:	2007
3. Month:	JUL
4. Day:	02
5. Hour:	12
6. Minute:	20

Save and Exit

Set the KBD controllers' Time & Date.

3.5 ALARM

```
ALARM
1. Check:        ON
2. Beep:         ON
Save and Exit
```

1. Alarm Check	When set to ON, the KBD controller will check alarm signal and each port can be connected 32 dome cameras. When set to OFF, it will not check alarm signal and each port can be connected 128 dome cameras.
2. Alarm Beep	When set to ON, the KBD controller will sound beep when alarm signal is detected.
Save and exit	Save the changed settings and return to the previous menu

NOTE: When domes are installed more than 64 at one dome port, you should set the alarm check to OFF.

3.6 LCD

```
LCD
1. Bright:       03
2. Backlight:    ON
Save and Exit
```

Bright: 01 ~ 12
Backlight: ON/OFF

3.7 DATA BANK

```
Data Bank
1. Download –>
2. Download –>
Exit(ESC)
```

The data bank function allows you to download the programmed data from the selected camera and to upload the saved data of the keyboard to the selected camera.

```
Data Bank 1
065.5%
```

Push the joystick to the right to download.

```
Data Bank 1
Download OK
```

After downloading, if success, press **ENTER**.

```
Data Bank 1
Download Error
```

After downloading, if fail, press **ENTER**.

```
Data Bank
1: 0001E
2: Download –>
```

After downloading, it displays as the right figure.

```
Data Bank 1
Upload
Clear Data
Exit(ESC)
```

To upload, select the upload and push the joystick to the right.

To clear the saved data, select the clear data and push the joystick to the right.

3.8 Initialization

MAIN MENU 8. Initialization

To initialize the keyboard, select Initialization.

After Initialization, the keyboard returns it to the factory value.

Are you sure? ENTER OR ESC

3.9 HOLD TIME

MAIN MENU 9. Hold time: 005s

When the dome ID of the master keyboard is the same as the slave keyboard or the one from AUX IN mode (dome2 port), during the hold time after the master keyboard control the dome, the slave keyboard and the unit from the AUX IN mode (dome2 port) cannot control the dome.

INF (Infinite)	Slave Keyboard user never has the right to control the dome which is selected by master Keyboard users.
1 ~ 200 second	After select hold time, the slave keyboard can control the dome.

When the dome ID of the master keyboard is not the same as the slave keyboard or the one from AUX IN mode (dome2 port), the hold time has no relation.

4. Slave Keyboard Setup

Master Keyboard should be setup as following procedure:

1. Check for DIP switch **the 8th of S1 „OFF"**.
2. Press **CTRL + MENU**. Check Slave KBD setting „ON".

Network ▶ Set Slave KBD ▶ Slave KBD: ON

Network ▶ Set Slave KBD ▶ Slave KBD Unit: ON for the desired slave keyboard

Slave Keyboard need to be setup with the following procedure:

1. Check for dip switch **the 8th of S1 „ON"**.
2. If you setup all connection correctly and turn on slave keyboard, you should see following screen.

Ver x.x Slave1 Password: xxxx

<– Current Device ID = 1

<– Default setting is **9 9 9 9** for administrator, **1 1 1 1** for user

Not connected

<– means that the controller is not connected to master keyboard.

3. Press **CTRL + MENU**. Set the Slave ID to 01.

MAIN MENU
1. Configuration
2. Network
3. LCD
4. Initialization
Exit(ESC)

Configuration	
1. Key Beep:	ON
2. Key Lock:	OFF
3. Chg User PW	
4. Chg Admin PW	
Save and Exit	

Network	
1. J-BOX Set:	OFF
2. Keyboard ID:	01
3. BPS:	9600
Save and Exit	

LCD	
1. Bright:	03
2. Backlight:	ON
Save and Exit	

5. Install with DVR Series

5.1 Install with Standalone DVR Series

When user wants to connect with DVR, proceed as the following order.

	J-Box	Dome
RS-485(+)	DOME 1 +	RX+ (TX+)
RS-485(-)	DOME 1 -	RX- (RX-)

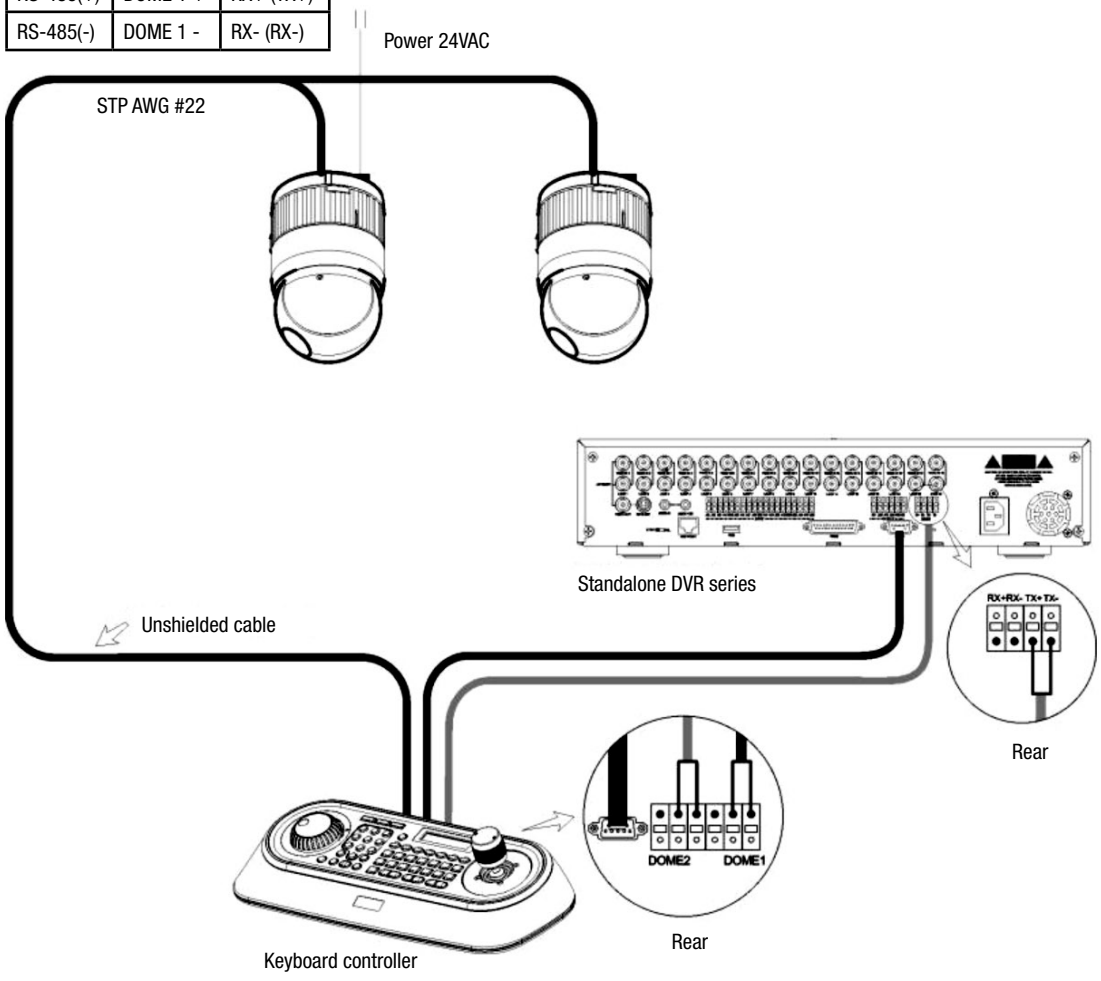


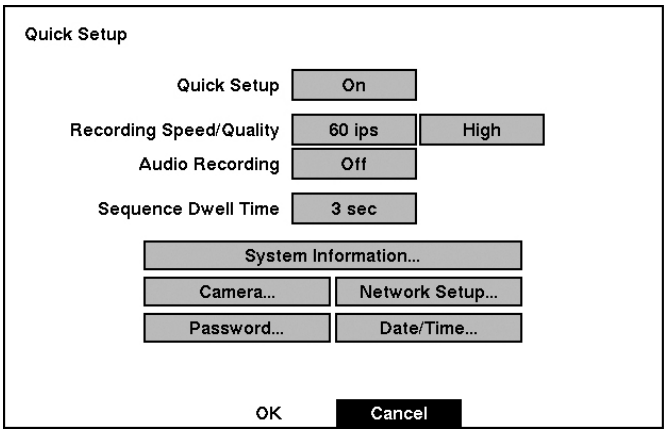
Figure 8: DVR connection diagram

1. Connect RS-232 cable between RS-232 Port of DVR and RS-232 of the Keyboard.
   (This connection enables DVR control remotely from KBD controller)
2. How to setup the KBD controller.
   A. Turn the Keyboard ON
   B. Input password (Factory setting is **9 9 9 9**)
   C. Open the menu of the KBD controller by pressing **CTRL + MENU** Key.
   D. Set as below in Network menu.

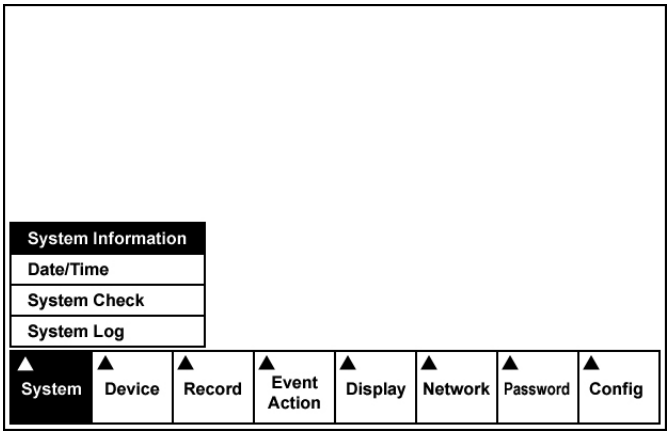
Set Baud Rate	
DOME1:	9600
DOME2:	9600
RS232:	9600

Com Ports	
DOME1:	Dome
DOME2:	AUX IN
RS232:	DVR1-DVR4

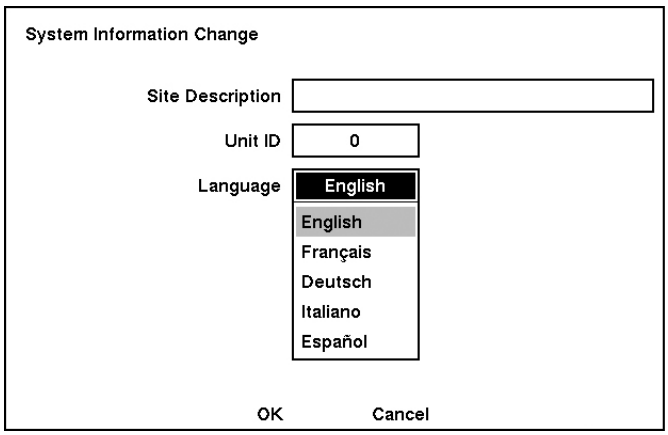
3. How to setup DVR



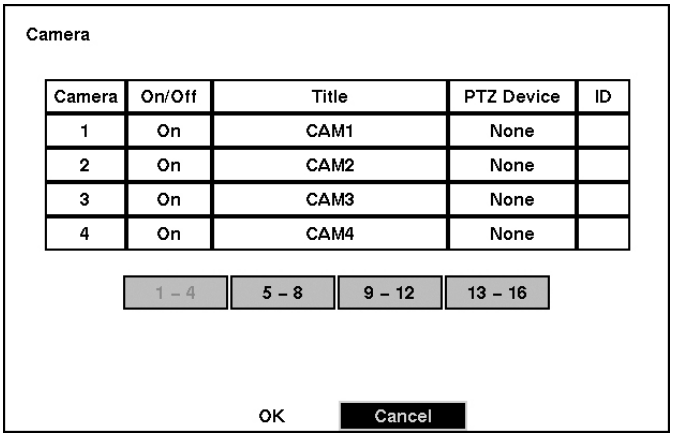
A. Press „OK”, and the below screen will be appeared.



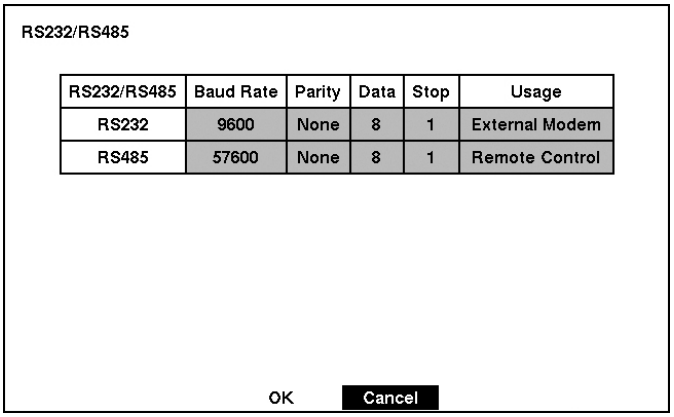
B. Select „System Information” on the system menu and change UNIT ID.



C. Select „Camera" on the Device menu. Unit ID should be 1 up to 99. Unit ID is not allowed number „0".



D. Set „PTZ Device" and „ID" of the dome camera. Select RS232/RS485 after PTZ is installed, and then set-up as below table.



RS-232/RS-485	Baud Rate	Parity	Data	Stop	Usage
RS-232	9600	None	8	1	Remote Control
RS-485	9600	None	8	1	PTZ Control

4. After setting Unit ID, Camera, and RS-232/RS-485, installing dome camera is basically completed. Please refer to the manual of DVR for the other installation.
5. Press the related number of the controller which is correspondent to unit ID of DVR. Then press DVR button and adjust unit ID of the controller
6. Make sure if any change is appeared on screen when you press ⊞ button of the controller for basic testing. If there's no change appeared, verify cable connection and setting of installation.

5.2 Install with PC DVR Series

If user wants to connect with PC DVR, please proceed as the following order.

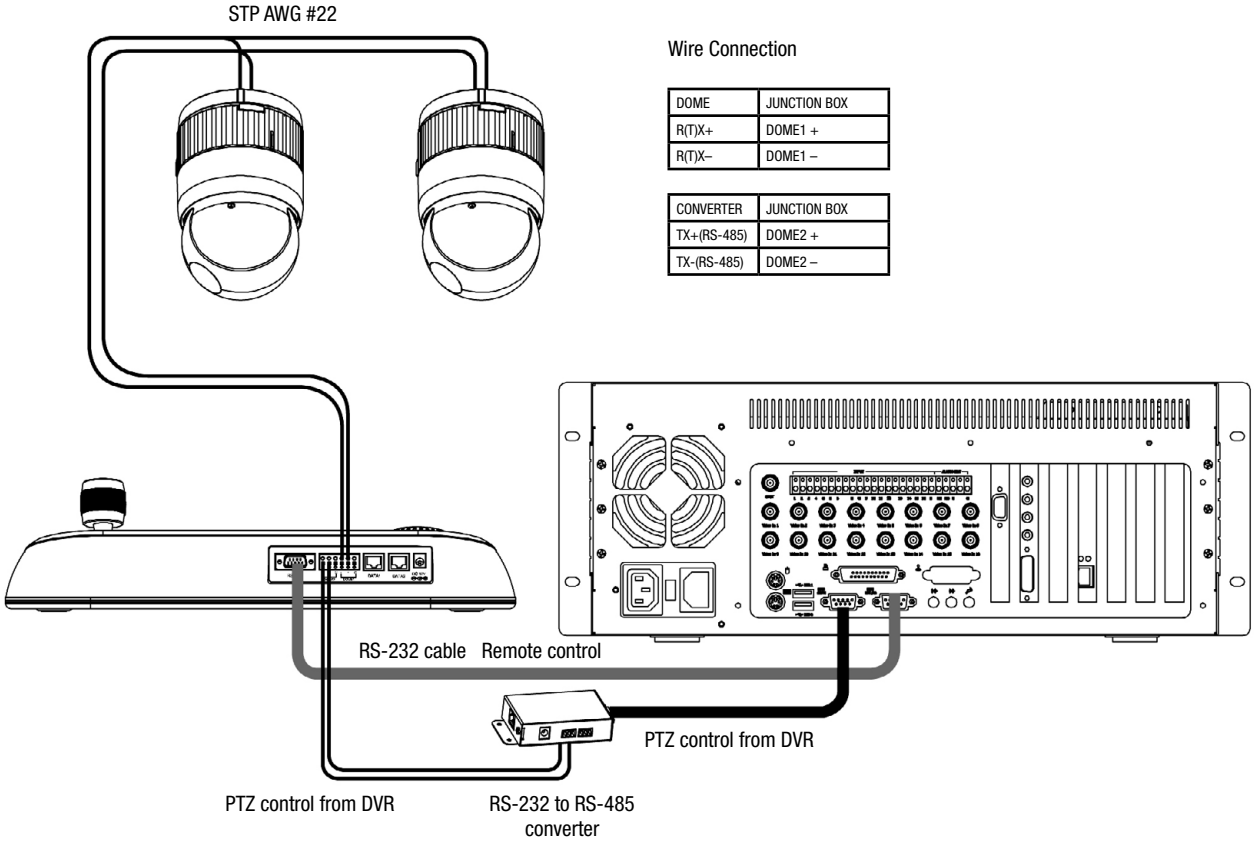


Figure 8: PC DVR Connection Diagram

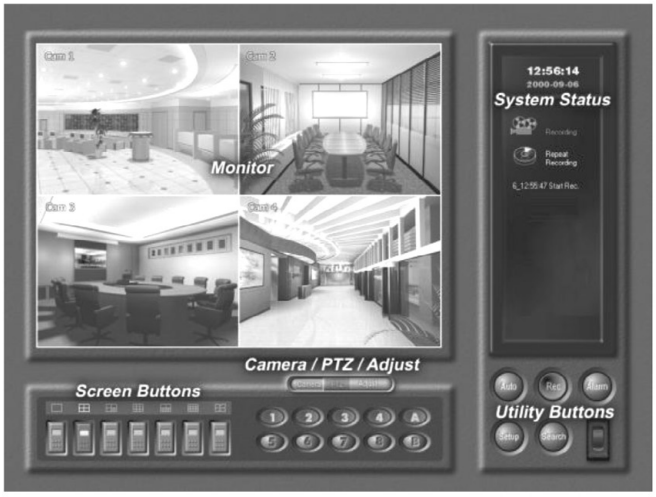
1. Connect RS-232C cable between RS-232C Port of PC DVR and RS-232C port of the Keyboard.
   (This connection enables PC DVR control remotely from KBD controller)
2. Plug the RS-232C to RS-485 converter in the RS-232C Port of PC DVR. Connect wires between the TX(+/-) of converter and DOME2(+/-) of Keyboard.
   (This connection enables PC DVR PTZ control from KBD controller)
3. How to setup the KBD controller.
   A. Switch the KBD controller ON
   B. Input password (Factory Setting is **9 9 9 9**)
   C. Open the menu of the KBD controller by pressing **CTRL + MENU** Key.
   D. Set as below in Network menu.

Set Baud Rate	
1. DOME1 :	9600
2. DOME2 :	9600
3. RS-232 :	9600

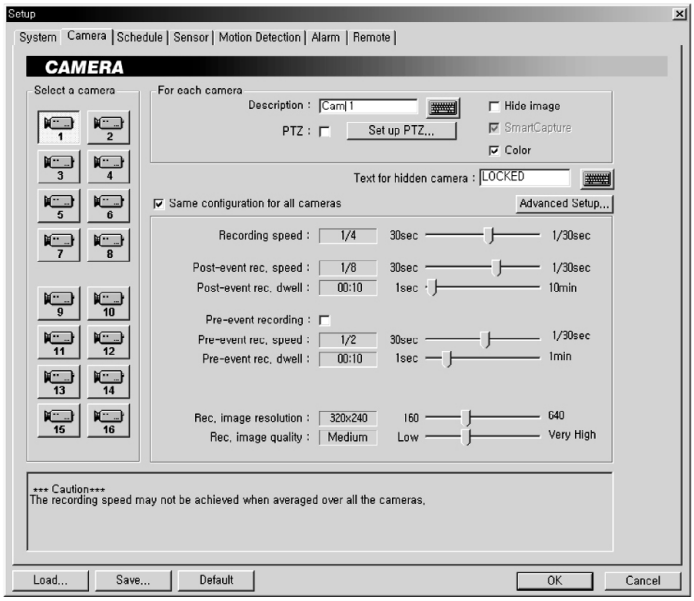
Com Ports	
1. DOME1:	Dome
2 DOME2:	AUX IN
3. RS-232:	PC-DVR

3. How to setup DVR

A. Switch the PC DVR on.



B. If press setup button on the above screen, the below screen will be appeared.



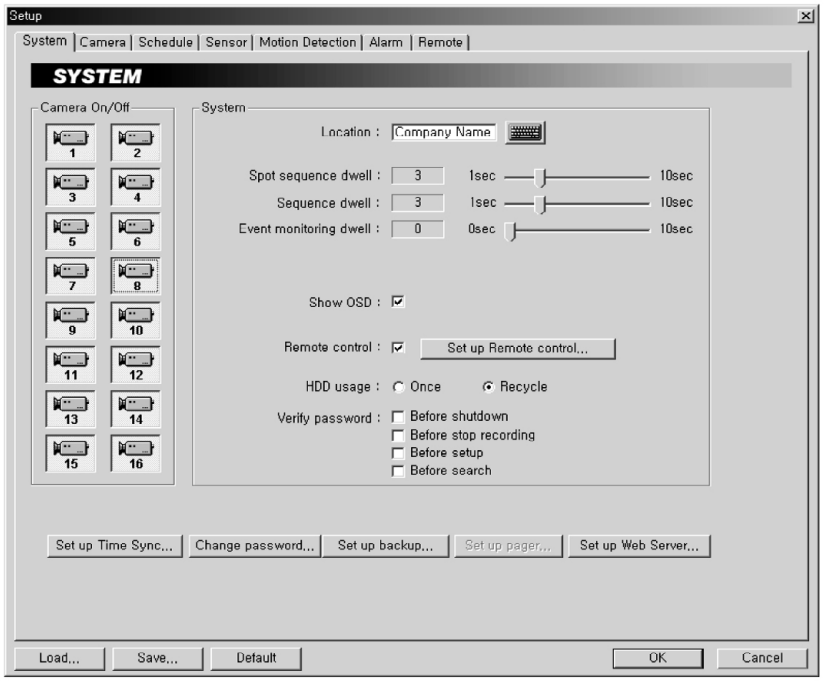
C. Select camera input number that dome camera connected. Then install as below to select set-up PTZ after checking PTZ box.

```
Port       : COM1
RX Device  :  Fastrax….
Baud Rate  : 9600
Data       : 8
Parity     : None
Stop Bit   : 1
```

D. If PTZ is not necessary for PC DVR, cable and installation here is not needed.
PC DVR is able to be controlled remotely and there 's no PTZ function)

5. How to PC DVR Remote setup

A. If selects Setup on main menu, the below screen will be appeared.



B. After selecting System and checking Remote control box, please install as below to select Setup remote control. Device ID is not allowed number „0".

```
Port      : COM2
Baud Rate : 9600
Date      : 8
Parity    : None
Stop Bit  : 1
Device ID  : XX
```

C. Make sure if any change is appeared on screen to press **QUAD** (Next Screen) button of a controller for basic testing. If there 's no change appeared, check cable connection and installation again.

6. Operation

6.1 Keyboard Lock/Unlock (Hidden command)

When the user leaves the control desk, he may wish to lock the keyboard controller to prevent unauthorized use.

Pressing **777 + ENTER** will lock the keyboard controller. Pressing **777 + ENTER** while the keyboard is locked will open the password screen. If the correct password is entered, the keyboard controller will return to normal operation.

If the power is turned off and on while the keyboard is locked, it will ask for the password. Entering the correct password will cause the keyboard controller to return to normal operation.

NOTE: If you forget your own passwords, turn off the keyboard controller, contact your distributor to get a 4-digit back door password. This will change the passwords to the factory default. Contact your distributor to get the 4-digit back door password.

6.2 Controlling Multiplexer

Using a multiplexer allows more flexibility in the types of cameras that can be used in a full system. Dome cameras and regular cameras can be mixed.

The keys **PIP, 2x2, 3x3, 4x4, ZOOM, SET**, etc., are keys that are used to operate the multiplexer.

6.2.1 Selecting Multiplexer

Duplex: Press **MACRO/MENU** key to enter Multiplexer set up menu and hold down the **ENTER** Key while navigating using the joystick. (**ENTER+Joystick**).

Triplex: Push the **Joystick** upward with the **ENTER** pressed **ENTER+Joystick**) will show the Mux menu. It will act like a mouse. Rotating the handle clockwise will act like the set key of the multiplexer. Rotating counterclockwise will act like the **ESC** key of the Multiplexer.

Selecting multiplexer (Mux ID **No. + MUX**)

Example: If the unit address of the Multiplexer is 128, you should press **1 2 8** + **MUX** to control the 128th Multiplexer.

6.2.2 Dome Camera Selection

Selecting camera (No. + CAM)

With these selections, the keyboard controller has full control of the selected camera if it is a dome camera.

Viewing full screen mode (Mux ID **No. + MUX**, Multiplexer video input **No. + MAIN**)

Select cameras 1 to 16 by pressing the camera number and then Main. The selected camera will appear in the full screen mode and is under control if it is a dome camera.

Picture on Spot output monitor (SPOT **No. + SPOT +** Camera **No. + ENTER**)

Pressing SPOT **No. + SPOT +** Camera **No. + ENTER** will switch the selected camera number to the specific spot monitor output of the multiplexer. The selected camera can be a dome camera or a standard camera. The Keyboard controller maintains control of the previously selected dome camera. It does not change the main output of the multiplexer.

Example:

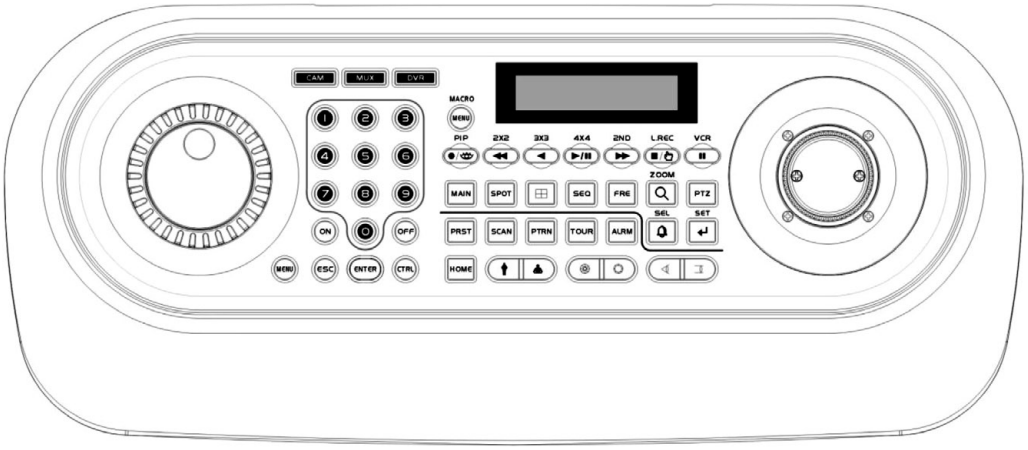
1 + MUX, **2** + **SPOT** + **12** + **ENTER** will switch camera 12 on multiplexer 1 to the spot output 2 of multiplexer 1.

2 + MUX, **1** + **SPOT** + **16** + **ENTER** will switch camera 16 on multiplexer 2 to the spot output 1 of multiplexer 2.

6.3 Summary of Keyboard Controls

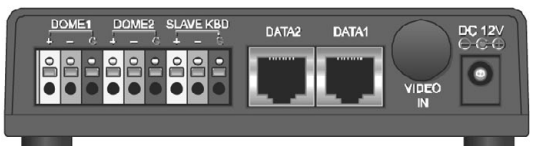
Key operation example

CTRL + MENU : Press and hold down **CTRL** Key and press **MENU** Key.
1 + CAM : Press **1** Key, **CAM** Key sequentially.
CTRL + JOYSTICK : Press and hold down **CTRL** Key while manipulate ***Joystick*** Handle.
ENTER + JOYSTICK : Press and hold down **ENTER** Key while manipulate ***Joystick*** Handle.



Optional Junction Box (Art. No. 902037)

Description	Q'ty
Junction Box (J-box)	1
3m 8pin cable (unshielded)	2
M4 x L10 Self tapping screws	4



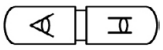
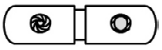
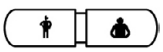
Front

Rear

NOTE: This junction box is not included in the keyboard box.

NOTE: Don't supply the power to the keyboard and the junction box together.
When you use the junction box with the keyboard, connect the power adaptor of the keyboard to the junction box.

6.3.1 Keys for Dome Cameras

Function	Key Label	Descriptions
Camera selection	**No. +** CAM	Displays the selected camera on the spot out of the multiplexer and allows the camera to be controlled by the keyboard controller, if the selected camera is a dome camera. Function number selection with function keys. (e.g. **1 + CAM**, **3 + TOUR**, **5 + SCAN**, **6 + PRST**)
Cancel	ESC	Cancels current inputs. Exits from currently running functions or menu, error status, etc.
Alarm	ALRM	Disregards all currently activated alarms and turns off the beep temporarily. If alarm is activated again within the programmed hold time, the timer will restart and beep again.
Relay ON	ON	Relay No. **1~4 + ON** will activate the selected relay.
Relay OFF	OFF	Relay No. **1~4 + OFF** will disable the selected relay.
Home	HOME	Immediately calls Home function. Deletes selected value or function in programming mode
Global	ENTER	Sends all cameras to preset (e.g. **1, 2... 55 + ENTER**). **888 + ENTER**: Night shot mode, **999 + ENTER**: Normal mode
Call Preset position	PRST	Pressing **PRST** will bring up the preset programming menu. Recalls preset; e.g. **1, 2 ... 31 ... 240 + PRST** In the preset or tour programming mode, the operator can review the exiting preset (selected by cursor) by pressing this key.
Tour	TOUR	Pressing **TOUR** will bring up the tour programming menu directly. Recalls programmed presets or functions sequentially. (e.g., **1 + TOUR**)
Pattern	PTRN	Pressing **PTRN** will bring up the pattern programming menu directly. Repeats the selected pattern of the current dome camera. (e.g., **1 + PTRN**)
Auto Scan	SCAN	Pressing **SCAN** will bring up the Auto Scan programming menu. Calls Auto panning function (e.g. **2 + SCAN** repeats Auto Scan 2).
Configuration	MENU	Enters programming menu. **CTRL + MENU** will invoke Keyboard set up menu
Program	CTRL	**No. + CTRL + PRST** will store current view as a preset directly. **No. + CTRL + TOUR** will open programming menu **No. + CTRL + SCAN** will open programming menu
Control	CTRL	**CTRL+Joystick:** In a programming mode (Preset, Pattern, Scan, Privacy....) the joystick operates as if in the normal control mode. While pressing and holding down the **CTRL** key, all movements of the joystick will start recording when in the pattern programming menu. **CTRL + Joystick**: In normal operation mode, manual speed of the joystick control will be operated in turbo mode.
Enter	ENTER	Completes entering data for the password or title **ENTER + Joystick**: Direction key in DVR remote mode or Mux (PTZ, Mouse, Cursor)
Manual Focus		Overrides auto focus. Moving the Zoom handle reactivates Auto Focus mode.
Manual Iris		Overrides auto iris. Moving the joystick reactivates Auto Iris mode.
Zoom		Zoom control
Joystick	**Twist,** **Up / Down** **Left / Right**	Zoom control (proportional to position). Tilt control, Cursor Up / Down in the menu Pan control, Cursor Left / Right or Page scroll in the menu.

6.3.2 Keys for Multiplexer

Function	Key Label	Descriptions
Select MUX ID	MUX	Select Multiplexer (e.g. **1** or **2 + MUX**)
Full Screen	**No. +** MAIN	Puts the multiplexer in Full-Screen Mode of the selected camera No.
PiP	**PIP** ●/👁	Picture-in-Picture mode
2 by 2 Display	**2X2** ◀◀	Displays view of four cameras. The remaining cameras can be sequenced in the lower-right window.
3 by 3 Display	**3X3** ◀	Displays view of nine cameras. The remaining cameras can be sequenced in the lower-right window.
4 by 4 Display	**4X4** ▶/II	Displays view of 16 cameras in 1/16-size pictures.
2nd	**2ND** ▶▶	Second mode of PIP multiplexer. Pressing **2nd + ENTER** again will return to normal mode.
Panic record	**L.REC** ■/✋	Put a camera in the Panic Record Mode
Macro	**MACRO** MENU	Same as **MENU** key in the Duplexer model Same as **MACRO** key in the Triplexer model
Select or Alarm	**SEL** 🔔	Same as **SELECT** key in the Duplexer model Same as **ALARM** key in the Triplexer model
Freeze	FRE	Freeze the video from the currently selected camera
Digital Zoom	**ZOOM** 🔍	Enter the Zoom Mode
Sequence	SEQ	Put the multiplexer in the Sequence Mode
VCR	**VCR** II	Switch the multiplexer into VCR playback mode
SET	**SET** ↵	This button has several functions. It brings up a Popup menu, sets selections on the OSD menus and decreases numbers in the number setup function.
Spot output	**Spot No. +** SPOT **+ Camera No. +** ENTER	Displays selected camera as spot output of the current Multiplexer. (e.g. **2 + SPOT + 1 + ENTER** will display camera 1 as a spot output 2of the current Multiplexer)
Cursor movement	ENTER **+ Joystick**	Up / Down / Left / Right control in the ZOOM and SET UP mode. Handle turn clockwise for SET mode. Handle turn counterclockwise for ESC mode.

6.3.3.1 Keys for DVR (DVR 1 ~ 4, PC-DVR)

Function	Key Label	Descriptions
ID Selection	DVR	DVR ID Selection (e.g. **1** or **2 + DVR**)
MENU	MACRO (MENU)	Enter the Quick Setup screen. You will need to enter the administrator password to access the Quick Setup. Pressing the button also closes the current menu or setup dialog box.
Record	(●/👁)	**[DVR1, DVR3]** Record on and off. **[DVR2, DVR4]** Turn the panic record on and off.
Recall Preset	**No. +** (●/👁)	Recall the preset number in the PTZ mode.
Rewind	◀◀	Play video backward at high speed. Pressing the button again toggles the playback speed from ◀◀, ◀◀◀ and ◀◀◀◀.
Reverse Play	◀	No operation
Play/Pause	▶/❚❚	**[DVR 1 ~ 4]** Play recorded data / Pause playing. **[PC-DVR]** Play
Fast Forward	▶▶	Play video forward at high speed. Pressing the button again toggles the playback speed from ▶▶, ▶▶▶ .and ▶▶▶▶.
STOP	■/✋	**[DVR1, DVR2]** During Playback mode returns the DVR to the Live Monitoring mode.
SPOT	■/✋	**[DVR3, DVR4]** Display the SPOT pop-up menu.
Save Preset	**No. +** (■/✋)	Save the preset number in the PTZ mode.
Pause	❚❚	**[DVR 1 ~ 4]** No operation. **[PC-DVR]** Pause
Full Screen	**No. +** MAIN	Displays selected camera in Full-Screen mode and enter the numbers in the login menu.
Spot Sequence	**Spot No. +** SPOT **+** ENTER	Toggle on and off sequence mode of the selected spot output.
Spot output	**Spot No. +** SPOT **+** **Camera No. +** ENTER	Displays selected camera as spot output of the current DVR.
Display Mode	⊞	Toggle between different display formats. The available formats are: full, 4x4, 3x3, 2x2 and PIP.
Sequence	SEQ	When in the live mode, pressing the SEQUENCE button displays another full live channel sequentially. When in one of the multi-view formats, pressing this button will cause the DVR to sequence cameras in two sequence modes: „Page" and „Cameo". In the Page mode, the DVR sequences through user-defined screen layouts (pages). In the Cameo mode, the bottom, right screen to display live cameras sequentially. Pressing the SEQUENCE button while in the Sequence mode will exit the Sequence mode.
Freeze	FRE	Freeze the current live screen
Search	🔍	Go to the playback mode and exit the playback mode.
Digital Zoom	CTRL + 🔍	**[DVR 1 ~ 4]** Enter the digital zoom mode when DVR has the digital zoom function.
Alarm	🔔	First, it will reset the DVR's outputs including the internal buzzer during an alarm. Second, it will display the event log when you are in the live monitoring mode unless there is an active alarm.
Enter	↵	**[DVR 1 ~ 4]** Select a highlighted item or completes an entry that you have made.
Cursor Movement	ENTER **+ Joystick**	Up / Down / Left / Right control in the digital zoom and SET UP mode. Handle turn clockwise for SET mode. Handle turn counterclockwise for ESC mode.
Shuttle		The Shuttle Ring operates in the Playback mode only. Turning the ring clockwise plays video forward. Turning the ring counterclockwise plays video backward.
Jog		The Jog Dial operates only when playback video has been paused. By turning the jog dial clockwise, you can play video forward image-by-image.

Function	Key Label	Descriptions
Cam Selection	**No. +** CAM	**[PC-DVR]** Select the camera and change the camera in the full-screen mode.
Display Mode	**CTRL + 1 ~ CTRL + 9**	**[PC-DVR]** Change screen mode.
Go last	CTRL + ▶▶	**[PC-DVR]** Go last
Go last	CTRL + ◀◀	**[PC-DVR]** Go last
X times Forward play	**1 ~ 9 +** ▶▶	**[PC-DVR]** Fast play at x (No.) times speed.
X times Backward play	**1 ~ 9 +** ◀◀	**[PC-DVR]** Fast rewind at x (No.) times speed.
PTZ	PTZ	**[DVR1- 4]** Open a Pan/Tilt/Zoom screen which allows you to control properly configured PTZ cameras.
Manual Focus	CTRL +	When a PTZ camera is connected to the DVR, it can control the focus. Moving the Zoom handle reactivates Auto Focus mode.
Manual Iris	CTRL +	When a PTZ camera is connected to the DVR, it can control the IRIS. Moving the joystick reactivates Auto Iris mode.
Zoom	CTRL +	When a PTZ camera is connected to the DVR, it can control the zoom position.
Movement	ENTER **+ Joystick**	Up / Down / Left / Right control in the PTZ mode. Handle turn clockwise or counterclockwise for then zoom control.

* When DVR has the record button, select DVR1
* When DVR has the panic record button, select DVR2
* When DVR has the record button and the spot button, select DVR3
* When DVR has the panic record button and the spot button, select DVR4
* When DVR is the PC based DVR, select PC-DVR
* The key for the dome control operates only when the dome is connected to the DVR by RS-485 and the DVR is in the PTZ mode.

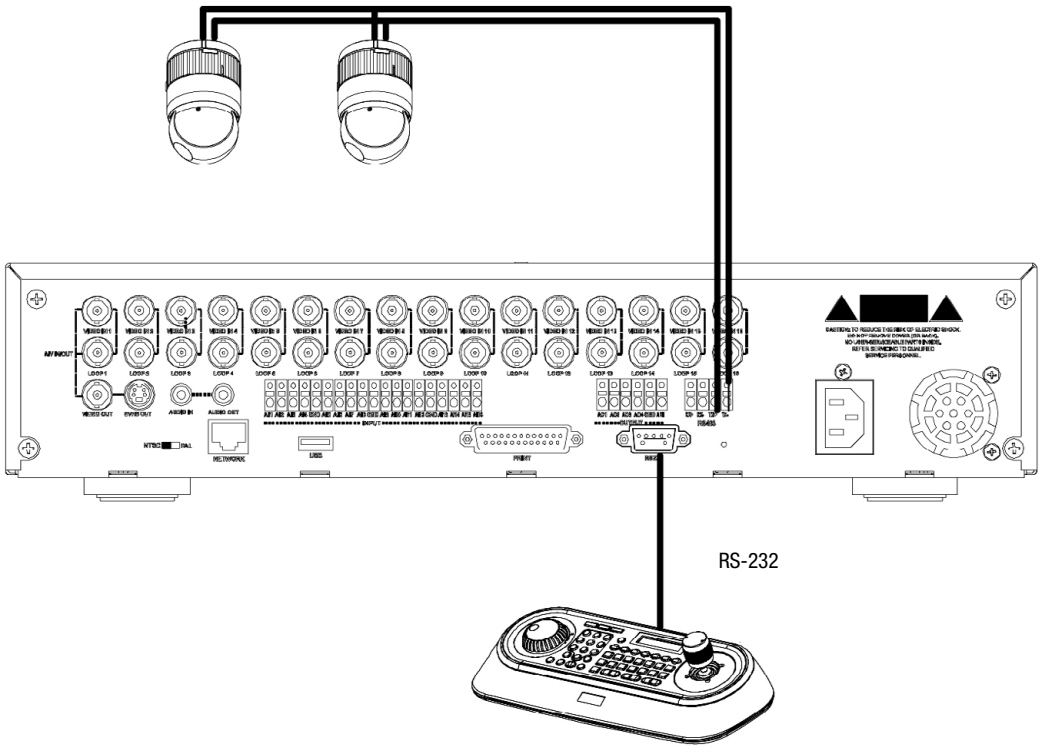
6.3.3.2 Example for Key Operation in PC- DVR

Function	Key Label	Descriptions	
		Live (Guard) Mode	Playback Mode
MENU	MACRO MENU	No action	
Record	●/👁	Record ON/OFF	
Recall Preset	No. + ●/👁	Recall Preset	
Search	🔍	Go to playback mode	Stop
Rewind	◀◀	No action	Rewind one image
X times Backward play	1 ~ 9 + ◀◀	No action	Fast rewind at x (No.) times speed
Reverse Play	◀	No action	Reverse play
Play/Pause	▶/❚❚	No action	Play
Fast Forward	▶▶	No action	Record
X times Forward play	1 ~ 9 + ▶▶	No action	Fast play at x (No.) times speed
STOP	■/✋	No action	Go to Guard mode
Save Preset	No. + ■/✋	Save the preset number in the PTZ mode.	
Pause	❚❚	No action	Pause in playing
Full Screen	No. + MAIN	No action	
Spot Sequence	Spot No. + SPOT + ENTER	Operate according to the model or not	
Spot output	Spot No. + SPOT + Camera No. + ENTER	Operate according to the model or not	
Display Mode	⊞	Change Display Mode	No action
Sequence	SEQ	Sequence	No action
Freeze, PTZ, Enter	FRE PTZ ↵	No action	
Camera Selection	No. + CAM	Camera Selection	

* For example, press 🔍 to enter the playback mode.

6.4 DVR5 protocol for the DVR for the version 3.1.0 and over Installation of the DVR5 protocol when one DVR is used.

NOTE: When you set the protocol to DVR5, the keyboard operates as the DVR's keyboard only you must install domes to the DVR only.



When you control the PTZ camera by the DVR, follow as below.

1. Connect RS-232 cable between RS-232 Port of DVR and DVR port of the J-box. (This connection enables DVR control remotely from KBD controller)
2. Connect RS-485 cables between the DVR and PTZ cameras.
3. Connect the power jack to the power port of the keyboard.
   A. Input password (Factory setting is **9 9 9 9**)
   B. Open the menu of the KBD controller by pressing **CTRL + MENU** key.
   C. Set as below in Network menu.

Set Baud Rate	
1. DOME1:	9600
2. DOME2:	9600
3. RS-232:	9600

Com Ports	
1. DOME1:	NONE
2 DOME2:	NONE
3. RS-232:	DVR5

NOTE: The baud rate of DVR/AUX should be the same as one of the RS-232 of the DVR

4. How to setup DVR:
   D. Switch the DVR on.
   E. Enter the Menu according to the DVR's instruction manual.
   F. Change the Port to „RS-232" of the remote control in the devices menu.
   G. Confirm matching the setup of RS-232 with the keyboard.
      Ex: Baud Rate: 9600, Data Bit: 8, Stop Bit: 1, Parity: None)
   H. Change the Remote Control to „Remote Control2" in the devices menu.
   I. Change the Port to „RS-485" in the PTZ menu of the camera of the devices menu.
   J. Confirm matching the setup of RS-485 of the PTZ menu with PTZ cameras.
   K. Set the PTZ menu according to PTZ cameras.
      NOTE: The baud rate of all PTZ cameras should be used one speed type (ex. All 9600 or all 2400)
      NOTE: The product of FASTRAX should be used „FASTRAX2"
   L. Set the ID number according to PTZ cameras.
   M. Set the system ID number to 1.

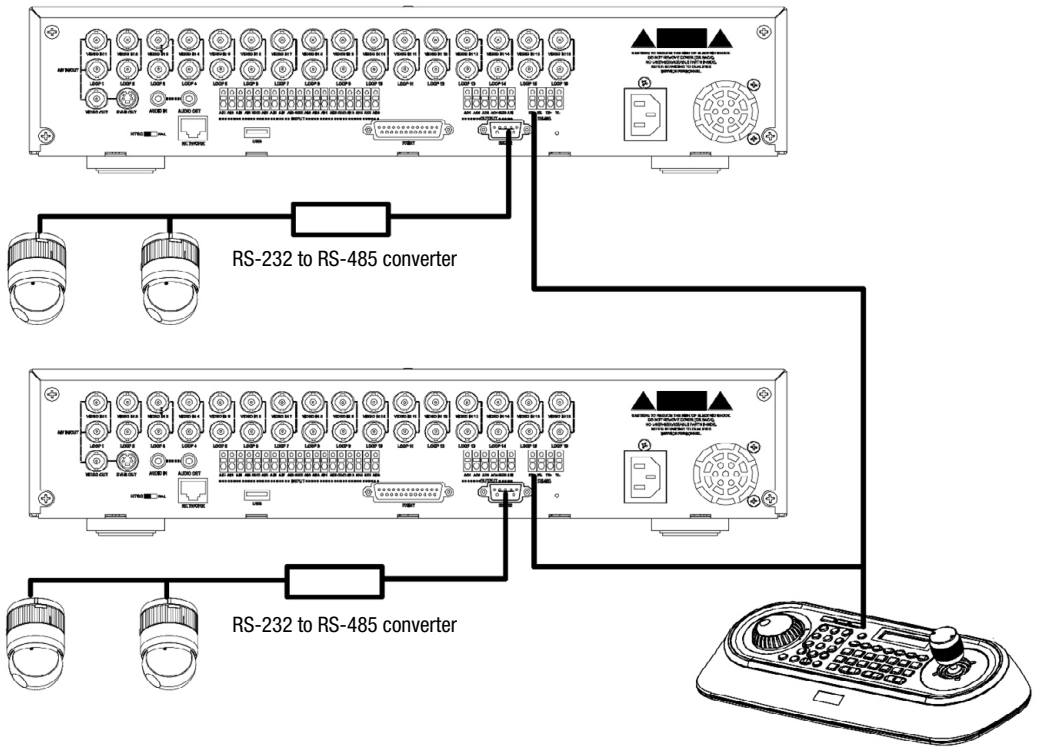
6.4.1 Operation of the keyboard

When the PTZ camera is installed on the DVR, you should select the number of the input channel not the ID number of the PTZ camera.

For example, when the PTZ camera with the 5 ID number is installed the number 1 of the input jack of the DVR, to control the camera, you select **1 + CAM** not **5 + CAM**.

Action	Key pressing	Remark / LCD display
DVR selection	**1 +** DVR	Displays DVR-001 at the top line
Camera selection	**1 +** CAM	CAM:0001 at the top line DVR-001 at the top line
	17 + CAM	CAM:0017 at the top line DVR-001 at the top line
Camera selection of DVR #2	**2 +** DVR	CAM:0017 at the top line DVR-002 at the top line
Camera 1 selection of DVR #2	**1 +** CAM	CAM:0001 at the top line DVR-002 at the top line
Return to DVR #1	**1 +** DVR	CAM:0001 at the top line DVR-001 at the top line
Full-screen selection	**1 +** MAIN	CAM:0001 at the top line DVR-001 at the top line
	16 + MAIN	CAM:0016 at the top line DVR-001 at the top line
	32 + MAIN	CAM:0032 at the top line DVR-001 at the top line
Return to DVR #2	**2 +** DVR	CAM:0032 at the top line DVR-002 at the top line
Control SPOT output	**1 +** SPOT **+ 1 +** ENTER	Camera 1 goes to SPOT 1 output
	2 + SPOT **+ 16 +** ENTER	Camera 16 goes to SPOT2 output
	1 + SPOT **+** ENTER	Sequence SPOT 1 output
	1 + SPOT **+** ENTER	Stop the sequence of SPOT 1 output

6.4.2 Installation of DVR5 protocol when many DVR is use



When you control PTZ cameras on many DVRs, you need RS-232 to RS-485 converter.

PTZ cameras are connected to RS-232 to RS-485 converter by the RS-232 port of the DVR and the keyboard is connected through the RS-485 port of the DVR. Follow as below.

1. Connect RS-485 cable between RS-485 Port of DVR and the DOME1 port of the keyboard.
2. Connect RS-232 cable between RS-232 Port of DVR and the RS-232 Port of the RS-232 to RS-485 converter.
3. Connect PTZ cameras to the RS-485 Port of the RS-232 to RS-485 converter.
4. Repeat the step 1-3 each DVR.
5. Set the system ID number of each DVR from 1 to the last DVR increasing 1.
6. Set the network menu of the keyboard as below.

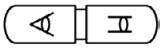
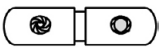
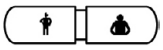
Set Baud Rate	
1. DOME1:	9600
2. DOME2:	9600
3. RS-232:	9600

Com Ports	
1. DOME1:	DVR5
2 DOME2:	NONE
3. RS-232:	NONE

NOTE: The baud rate of DOME1 should be the same as one of the RS-485 of the DVR

7. How to setup DVR:
   A. Switch the DVR on.
   B. Enter the Menu according to the DVR's instruction manual.
   C. Change the Port to „RS-485" of the remote control in the devices menu.
   D. Confirm matching the setup of RS-485 with the keyboard.
      Ex: Baud Rate: 9600, Data Bit: 8, Stop Bit: 1, Parity: None
   E. Change the Remote Control to „Remote Control2" in the devices menu.
   F Change the Port to „RS-232" in the PTZ menu of the camera of the devices menu.
   G. Confirm matching the setup of RS-232 of the PTZ menu with PTZ cameras.
   H. Set the PTZ menu according to PTZ cameras (PRODUCT and ID).
      NOTE: The baud rate of all PTZ cameras should be used one speed type (ex. All 9600 or all 2400)

6.4.2.1 Keys for Dome Cameras

Function	Key Label	Descriptions
Camera selection	**1 ... 16 +** CAM	Displays the selected camera number.
Cancel	ESC	Cancels current inputs. Exits from currently running functions or menu, error status, etc.
Alarm	ALRM	No action
Home	HOME	Immediately calls Home function. Deletes selected value or function in programming mode
Call Preset position	PRST	Pressing PRST will bring up the preset programming menu. Recalls preset; e.g. **1, 2 ... 31 ... 240 + PRST** In the preset or tour programming mode, the operator can review the exiting preset (selected by cursor) by pressing this key.
Tour	TOUR	Pressing **TOUR** will bring up the tour programming menu directly. Recalls programmed presets or functions sequentially. (e.g., **1 + TOUR**)
Pattern	PTRN	Pressing **PTRN** will bring up the pattern programming menu directly. Repeats the selected pattern of the current dome camera. (e.g., **1 + PTRN**)
Auto Scan	SCAN	Pressing Scan will bring up the Auto Scan programming menu. Calls Auto panning function (e.g. **2 + SCAN** repeats Auto Scan 2).
Configuration	MENU	Enters programming menu. **CTRL + MENU** will invoke Keyboard set up menu
Program	CTRL	**No. + CTRL + PRST** will store current view as a preset directly. **No. + CTRL + TOUR** will open programming menu **No. + CTRL + SCAN** will open programming menu
Control	CTRL	**CTRL+Joystick:** In a programming mode (Preset, Pattern, Scan, Privacy....) the joystick operates as if in the normal control mode. While pressing and holding down the **CTRL** key, all movements of the joystick will start recording when in the pattern programming menu. **CTRL + Joystick**: In normal operation mode, manual speed of the joystick control will be operated in turbo mode.
Enter	ENTER	Completes entering data for the password or title **ENTER + Joystick**: Direction key in DVR remote mode.
Manual Focus		Overrides auto focus. Moving the Zoom handle reactivates Auto Focus mode.
Manual Iris		Overrides auto iris. Moving the joystick reactivates Auto Iris mode.
Zoom		Zoom control
Joystick	**Twist,** **Up / Down** **Left / Right**	Zoom control (proportional to position). Tilt control, Cursor Up / Down in the menu Pan control, Cursor Left / Right or Page scroll in the menu.

6.4.2.2 Keys for DVR (DVR5)

See the DVR's manual to know in detail.

Function	Key Label	Descriptions
DVR Selection	DVR	DVR ID Selection (e.g. **1** or **2 + DVR**)
PTZ	PTZ	Open a Pan/Tilt/Zoom screen which allows you to control properly configured cameras.
Play/Pause	▶/II	Play recorded data / Pause playing.
Rewind	◀◀	Play video backward at high speed. Pressing the button again toggles the playback speed from ◀◀, ◀◀◀ and ◀◀◀◀.
Fast Forward	▶▶	Play video forward at high speed. Pressing the button again toggles the playback speed from ▶▶, ▶▶▶ .and ▶▶▶▶.
STOP	■/✋	During Playback mode returns the DVR to the Live Monitoring mode.
Record	●/👁	Set the DVR so that it is ready to record video.
MENU	MENU **MACRO**	Enter the menu screen. You will need to enter the administrator password to access the menu if enabled. Press the button to see the search menu in the playback mode. Pressing the button also closes the current menu or setup dialog box.
Alarm	🔔	Invokes the event log search menu.
Freeze	FRE	Freeze the current live screen
Zoom	🔍	Display the digital zoom screen.
Sequence	SEQ	Sequence
Display Mode	⊞	Toggle between different display formats. The available formats are: full, 4x4, 3x3, 2x2 and PIP.
Display Mode	**1, 2, 3, 4 +** ⊞ **(Quad)**	PIP (1+Quad), 2x2 (2+Quad), 3x3 (3+Quad) and 4x4 (4+Quad)
Enter	↵	Select a highlighted item or completes an entry that you have made.
Spot Sequence	**Spot No. +** SPOT **+** ENTER	Toggle ON and OFF sequence mode of the selected spot output.
Spot output	**Spot No. +** SPOT **+** **Camera No. +** ENTER	Displays selected camera as spot output of the current DVR.
Full Screen	**No. +** MAIN	Displays selected camera in Full-Screen mode and enter the numbers in the login menu.
Cursor Movement	ENTER **+ Joystick**	Up / Down / Left / Right control in the digital zoom. Left / Right control in the quad or 3x3 screen.
Cursor Movement	**Joystick**	Up / Down / Left / Right control in the menu
Shuttle		The Shuttle Ring operates in the Playback mode only. Turning the ring clockwise plays video forward. Turning the ring counterclockwise plays video backward.
Jog		The Jog Dial operates only when playback video has been paused. By turning the jog dial clockwise, you can play video forward image-by-image.

7. Troubleshooting

If problems occur, verify the installation of the camera with the instructions in this manual and with other operating equipment. Isolate the problem to the specific piece of equipment in the system and refer to the equipment manual for further information.

Problem	Possible Solution
Joystick can't control system.	Check that the dome camera IDs are set properly. Check the polarity of the data line.
Camera number does not match the multiplexer number.	Check the camera ID and insert the BNC cable into the proper input of the multiplexer.
Forgot password	Consult your supplier, distributor or service center.
Multiplexer & DVR can't work with the Joystick controller.	1. Check that the data cable for the multiplexer has the correct Pin configuration (1=1, 2=2, 3=3 ... 8=8). 2. Check the communication menu of Multiplexer.

8. Short Cut Key

Short Cut Key	Function		
PRST	Pop up preset setup menu		
TOUR	Pop up guard Tour setup menu		
PTRN	Pop up Pattern setup menu		
SCAN	Pop up Auto Scan setup menu		
No.+ PGM+PRST	Store the current view at the selected number		
Short Cut Key	**Function**	**Short Cut Key**	**Function**
1 + ON	Turn On Relay 1.	**1 + OFF**	Turn OFF Relay.
2 + ON	Turn On Relay 2.	**2 + OFF**	Turn OFF Relay.
3 + ON	Turn On Relay 3.	**3 + OFF**	Turn OFF Relay.
4 + ON	Turn On Relay 4.	**4 + OFF**	Turn OFF Relay.
7 + ON	Change FOCUS to AUTO	**7 + OFF**	Change FOCUS to manual
8 + ON	Change AE to AUTO	**8 + OFF**	Change AE to manual
9 + ON	Change Night Shot to AUTO		
10 + ON	Night Shot ON (go to the manual mode)	**10 + OFF**	Night Shot OFF (go to the manual mode)
11 + ON	BLC on (AE auto mode)	**11 + OFF**	BLC OFF (AE auto mode)
12 + ON	Digital Zoom ON (according to digital zoom setting)	**12 + OFF**	Digital Zoom OFF
13 + ON	Dome OSD ON	**13 + OFF**	Dome OSD OFF
14 + ON	Dome Area Title Display ON	**14 + OFF**	Dome Area Title Display OFF
15 + ON	View Direction ON	**15 + OFF**	View Direction OFF
100 + ON	Shutter speed auto		
101 + ON	Shutter speed 1/4 (PAL 1/3) sec		
102 + ON	Shutter speed 1/2 sec		
103 + ON	Shutter speed 1 sec		
104 + ON	WDR ON	**104 + OFF**	WDR OFF
105 + ON	Stabilizer ON	**105 + OFF**	Stabilizer OFF
150 + ON	Image Flip ON	**150 + OFF**	Image Flip OFF
151 + ON	Origin Check		
152 + ON	Place the camera in the 0° area horizontally.		
153 + ON	Go to the slow speed mode.	**153 + OFF**	Go to the normal speed mode.
154 + ON	Display System Information		
155 + ON	Flip the camera in the 180° area horizontally		
250 + PRESET	Set the dome ID up to 3999.		
888 + ENTER	Night Shot ON (in the global mode only)		
999 + ENTER	Night Shot OFF (in the global mode only)		
For Keyboard Controller			
777 + ENTER	Lock the keyboard controller. To unlock the keyboard, enter the password of the keyboard.		

* Some function may not operate according to the model.

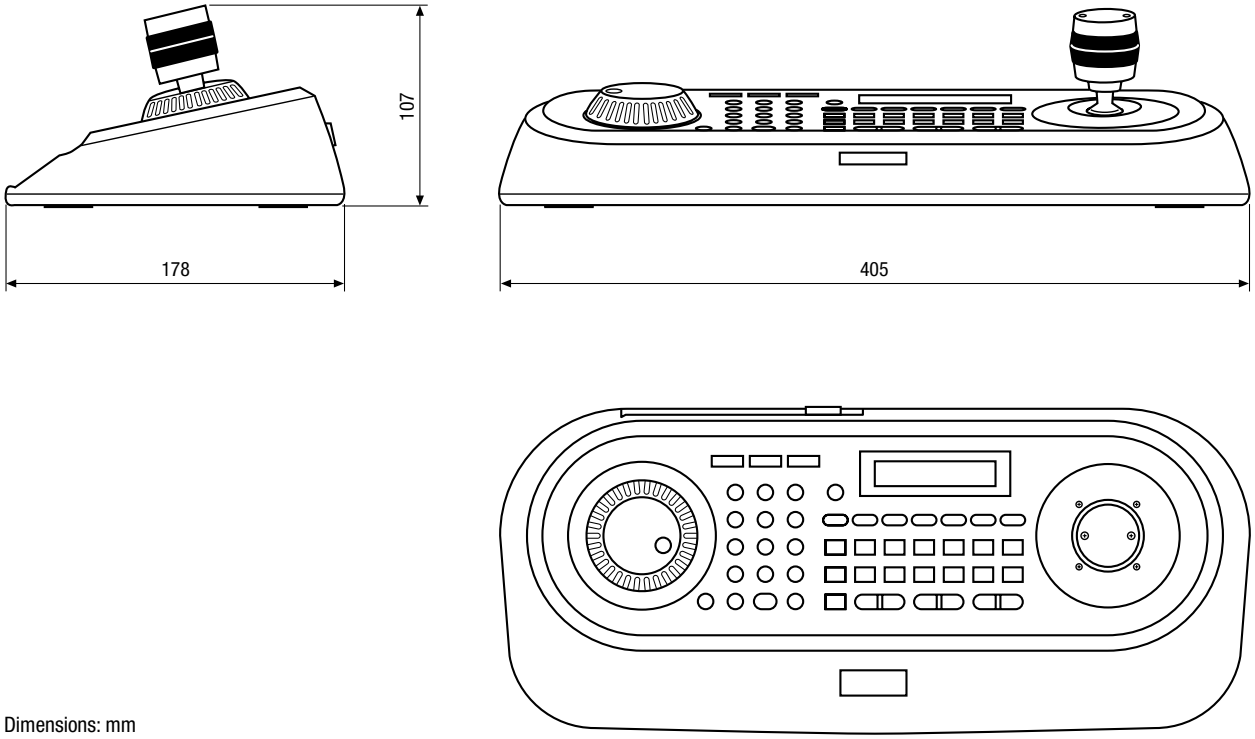
9. Specifications

Model	**KBD-2**
Art. No.	**74149**
Operation Mode	Single operation or 1 Master / 3 Slaves max.
Joystick	3-axis proportional joystick for manual control of variable speed
Multiplexer/camera control	up to 508 cameras
Site control (direct mode operation)	Keys select cameras and monitors, operate presets, patterns, auxiliaries, and sequences. Camera functions: pan, tilt, zoom, focus, iris for fixed or variable speed control of the camera series Fastrax, Minitrax
Baud rate	2400 ~38400 Baud
Control functions	Joystick: Pan/tilt/zoom operation, Key switches: Zoom /focus/iris, Jog shuttle: smoother DVR control
Protocols	Fastrax IIE and Pelco P&D
Interface	2x RS-485 (dome cameras/DVRs, Recorder series DLR, DTR, DPR, and slave port. 1x RS-232C (optional junction box EDC-KBD J-Box and DVR/PC port)
Remote control	Control of up to 254 Fastrax and/or Minitrax dome cameras. Up to 99 Digital Video recorders of the series DLR1.2, DLR3/4, DPR, DIR and DTR
LCD display	16x2 characters
Supply voltage	12VDC (PSU 100~240VAC, 50/60Hz included)
Power consumption	3.0watts max.
Colour	Black
Temperature range	0 ~ +50°C
Dimensions	See drawing
Weight approx.	1.2kg
Parts supplied	Power supply unit 100 ~240VAC / 12VDC, 50/60Hz, Manual
Certificates	CE
Remarks	**For Master/Slave operation the article #902037 (EDC-KBD J-BOX) is requested. No Master/Slave operation possible with keyboards EDC-KBD1 and EDC-KBDM-3**

Accessories

Art. No.	Type	Description
74219	**EDC-KBD J-BOX**	Junction box for EDC-KBD1, EDC-KBDM-3, KBD-2 series

10. Dimensional Drawings



Dimensions: mm

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